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DEVOTED TO

Practical and Progressive Agriculture, Horticulture,
Trucking, Live Stock and the Fireside.

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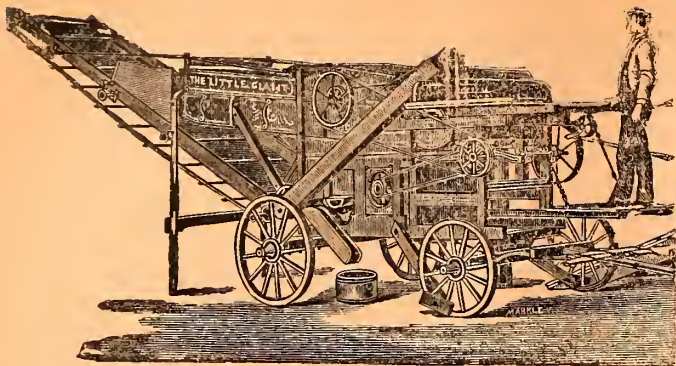
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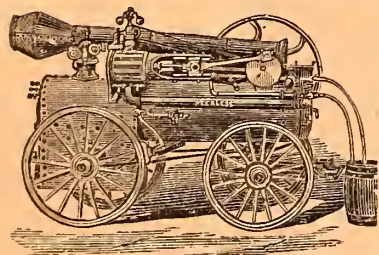
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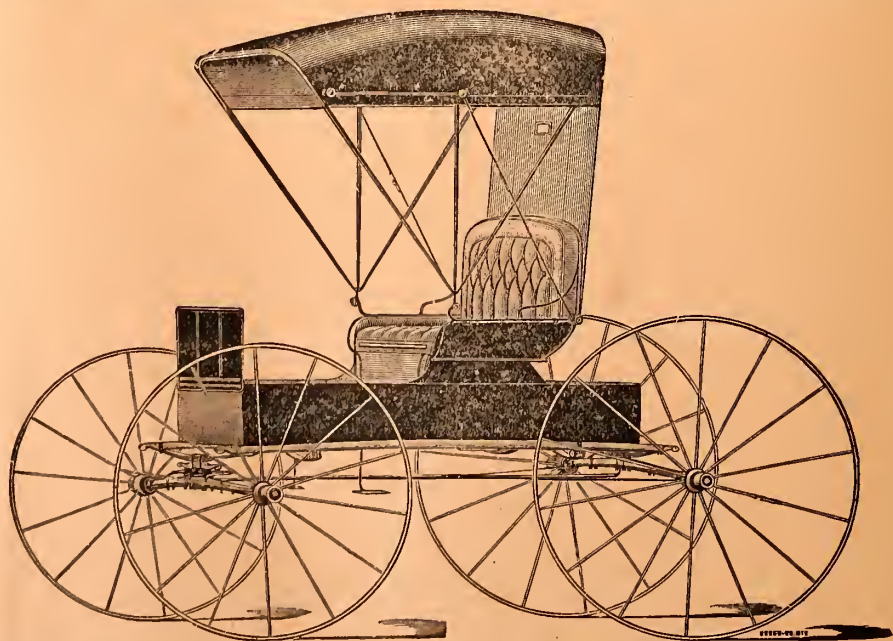
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Agriculture is the nursing mother of the Arts.--XENOPHON.
Tillage and pasturage are the two breasts of the State.--SULLY.

65th Year.

Richmond, December, 1904.

No. 12.

Farm Management.

WORK FOR THE MONTH.

The year has once again rolled round to its close, and the promise of the "Giver of all things" that "seed time and harvest should not fail," has once again been verified. Now that the ingathering of the results of the farmers' labors has been about completed, he can take stock of the same and compare the results with those of past years and seek to derive lessons therefrom for his future efforts. To Southern farmers this retrospect will be upon the whole a favorable one wherever the farmer did his duty by the land. Whilst the weather has been, nearly throughout the South, abnormal in respect to rainfall, there having been ever since the early spring months a deficiency in precipitation in nearly every State, yet in only one or two of these has such deficient precipitation amounted to anything like such a serious lack of moisture as to imperil crops. In several States it has no doubt somewhat curtailed the yield, yet in this and the adjoining States such has not been the case. All our crops, except wheat and hay, have been either up to or in excess of the average. In the case of the wheat crop, the deficient yield was not attributable so much to the lack of rainfall as to the long continued and severe cold of the winter following upon a dry seeding time, which caused slow germination of the crop and left it very small and delicate to withstand the freezing of the winter. The deficient hay yield was no doubt attributable to the lack of rain in the spring and early summer months. With our early haying season this was bound to result in a curtailment of the crop, yet notwithstanding

this we made in Maryland, Virginia and North Carolina an average of one and one-third tons to the acre; in South Carolina one and two-thirds tons to the acre, and in Tennessee over one and one-half tons to the acre. These crops compare very favorably with those of the Northern and New England States, where, although noted for making hay, few average yields in excess of those of the above Southern States are reported. The wheat crop of Maryland made an average yield of 13 bushels to the acre; of Virginia, 10 bushels to the acre; of North and South Carolina, 8 bushels to the acre, and of Tennessee, 11 bushels to the acre. These yields are no doubt very low, and represent no profit to the grower, but when compared with the average made in other winter wheat growing States for this year, may be taken to be not less in proportion than other growers had to submit to on account of the abnormal winter weather. There can be no question that the low average yield of wheat in the Southern States every year is largely the fault of the growers themselves, who will not give that preparation to the land which the crop requires in order to be grown profitably. This is evidenced by the fact that those who do give the land the proper preparation make crops as large as are made in any other part of the country. Even in this year of abnormal low yields we know farmers who made over 30 bushels to the acre without the use of any commercial fertilizer whatever. We have during the fall months written very fully on this subject of the proper preparation of the land for the wheat crop, and hope that the results will be seen next year in a

much higher average yield. The oat crop of the South was again a disappointment, but as this crop is only one of minor importance and mainly grown as a hay or forage crop, this fact is not of serious import, as the deficiency in forage yield was easily made good by the summer grown forage crops. We doubt much the advisability of persisting in making the oat crop a factor in our crops. It is essentially a cold climate crop, and our average weather conditions are not adapted to its successful growth. Its place as forage can well be taken by a summer grown forage crop, which we can raise to perfection. If grown at all, it should be sown in the early fall and be cut for hay when the grain is in the dough state before the hot weather sets in. Turning now to the great staple crops of the South, corn, cotton and tobacco, the retrospect is a most cheering one. Corn, which in area was more than the average has made in Maryland an average yield of 33 bushels to the acre, in Virginia an average yield of 23 bushels to the acre, in North Carolina an average yield of 15 bushels to the acre, in South Carolina an average yield of 12 bushels to the acre, and in Tennessee an average yield of 25 bushels to the acre. These yields are in all cases in excess of the average for the past ten years, and in some cases notably in excess, as is the case in Virginia. Whilst the yield of the cotton crop is not yet ascertained, there is every reason to believe the crop will be in excess of 11,000,000 bales. The tobacco crop whilst less in acreage is in excess of the average in yield per acre. The price of all the staple crops is in excess of the average for ten years. Wheat has steadily risen in price ever since the crop was harvested, and now stands near \$1.20 per bushel, with every indication of going higher. For the first time in the history of this country the production of wheat is not in excess of the requirements of the country, and foreign nations cannot look to us to meet their needs. Indeed, already wheat is being imported into this country from Canada. It looks at last as though the farmer stood some chance of getting a pull out of protection along with the other "infant industries," which have so long monopolised all the benefits of this vile policy. Imported wheat pays a duty of 25 cents per bushel, and when this duty begins to operate and makes bread dearer we shall soon see how the protected manufacturers will howl and denounce the injustice. They will fail to see that what is "Sauce for the goose is sauce for the gander also." So long as they can plunder the farmer they see no injustice in a protective tariff, which enables them to charge the home farmer from 25 to 50 per cent. more for a machine or implement than they charge the foreigner for the same thing, but when the farmer begins to get a little protection they will object. Let us hope the result will be to get rid of the whole system and make each "tub stand on its own bottom." The "infant industries" are now hoary with age, and ought to be able to "go it alone," or not go at all. With such an outlook as the figures indicate, the farmers of the South may and should be able to look upon the results of their labors for this year with satisfaction. Much of this improvement in the condition of the farming interests of the South is to be attributed to the change which has taken place in the methods of the Southern farmer. From being simply "planters" they are gradually becoming "farmers." We look upon this change with great satisfaction, as it is one for which we have labored earnestly for now nearly twenty years. We have urged in season and out of season that rotation of crops should be studied and practiced, and that the products of the farm should be converted at home into higher priced products than the raw products can ever bring, and which can be marketed at much less cost. This involves the keeping of live stock, and thus the production of home-made manure to take the place of commercial fertilizer. When Southern farmers keep the live stock which they can and ought to do, and consume on the farm all the roughage which they necessarily make in the production of the cereal crops and all the forage crops which they can grow in addition, then the quantity of commercial fertilizer, which at present is such a great tax to add to the cost of the crops, will be largely reduced and the crop producing capacity of the farms will be enormously enhanced. Whilst commercial fertilizers, or rather, we would say, the chemical constituents of which they are composed can be in almost all cases profitably used on land in a high state of fertility for the production of truck crops and tobacco, which have a high relative value over the normal cost of production they cannot be so used, except in the case of acid phosphate, and in some cases and on some lands potash, in the production of the cereals, cotton, forage and grass crops. These depend for their successful production more upon the physical and mechanical condition of the soil than upon the actual amount of quickly available plant food in the soil. They have a long period of growth, and the capacity to extract the food they require from a large area of land, by reason of their extensive root systems, if only the condition of the land is so perfect as to permit of this being done.

There is in all land so large a reserve of plant food as to meet the requirements of these staple crops if only the land is in a proper physical and mechanical condition. The addition of commercial fertilizers or chemicals will never change the physical or mechanical condition of the soil. This can only be brought about by deep plowing and perfect preparation of the land by the harrow, cultivator and roller, and the addition of home-made manure and vegetable matter derived from growing crops, and especially of the leguminous crops, which, in addition to their humus making content, also add to the soil, nitrogen, the one element of fertility not found there in abundance. Farmers are gradually taking to heart the lessons we have so long taught on this line, and it is seen in the increased crop producing character of their lands and their own material improvement. What the South most needs is not so much greater areas of land cultivated, but greater production per acre. As this change comes about greater profit will be the result. The labor cost of producing 40 bushels of wheat or 75 bushels of corn per acre is little more than that of producing 10 bushels of wheat and 20 bushels of corn, whilst the ultimate monetary return is wonderfully increased. The one yield will not pay the labor bill, the other yield will do this and give a large profit on the outlay.

It is too late now to seed any crops except it may be rye, and even for this crop it is very late and its success, if seeded, will largely depend upon the mildness of the winter, and Canada peas and oats for a forage crop. This latter crop ought not to be seeded until the end of January or in February, except in Tidewater Virginia and Eastern North Carolina. In these sections it may be seeded in December, and the period of sowing in other sections be gradually made later as we go westward until in the western sections of the Southern States it is put in in March. Canada peas and oats are essentially a cold climate crop, but can be successfully grown in the South if got in early enough, so that the crop comes to maturity before the hot weather sets in. It should be fully grown and ready for the mower in May, and where this is done it will be found a most useful crop for early grazing with hogs and for green forage and hay. Land to be sown in this crop ought to be in a good state of fertility. It will not make a profitable crop on poor land, but will grow and be found most useful on land which will grow a good crop of cow peas, and will improve the land for a corn crop to follow. The land should be well and deeply broken

and be made fine, and if not in a good state of fertility ought to have 300 pounds of acid phosphate and 50 pounds of muriate of potash to the acre applied broadcast and harrowed in. The peas at the rate of two bushels to the acre should be first sown and be put in deep with the drill or be plowed under so as to give them a cover of at least 5 inches. This will enable them to continue their growth long after the weather is too warm for them if planted shallow. After the peas have been covered sow three-quarters of a bushel of winter oats broadcast and harrow. The crop should not be grazed until the peas are formed in the pods and should be cut for hay when the peas are just beginning to ripen.

The work of plowing land intended to be cropped next year, not already seeded with a fall sown crop, should be given constant attention. In this issue will be found an article dealing with this question of fall and winter plowing and pointing out its advantages, to which we invite the attention of our readers.

The work of cleaning up new land and old fields that have been out of cultivation and are again intended to be cropped should have immediate attention given. Too often this work is put off until far into spring, and then, for want of time, is most inefficiently done, and the result is disappointment in the crop. Get the land broken deeply as soon as possible so that the benefit to be derived from the action of the atmosphere on the land may be as large as possible. Especially plow deeply all galled and gullied places, so that no further washing of the land may take place. Gather up and fill into the deep gullies all loose stones and rocks and plow the soil onto them from the sides. Have all stumps, bushes and briers effectually grubbed out and carried off the land or burnt. Where the stumps are not too large burning is the best way to get rid of them, and so of bushes and briers. In setting up the new fences see that the fields are laid off square or as near thereto as possible, as they will then be much more conveniently and economically worked. Let the fences run in straight lines from point to point. Where good rails are found in the old fence rows utilize these in the new fences by setting posts at a proper distance apart and fastening the rails to them with wire. This wire should be stapled to the bottom of one side of the post and then run up the post over the top and down to the bottom on the other side. As it is taken up the one side of the post staple it to the post at the point where a rail

is to be fixed put the rail against the post and carry the wire round it and staple again to the post above the rail, and so continue doing up to the top of the post. The wire going down the other side of the post should be utilized in the same way to fasten the ends of the rails going in the opposite direction. In this way a good post and rail fence can be made perfectly straight at very little cost and without nails. Often out of an old "worm fence" as many good rails may be taken as will serve to make a good fence or go a long way in saving cost of new rails. Fix gates at convenient places in the fences and so hang them that they will shut when not in use, and thus get rid of the trouble of cattle getting into the crops from rails being left down or gates left open. If any drains are needed in the fields have them put in when cleaning up the land. Put the drains down deep, at least 36 inches, and let them run straight up and down the slopes and not around the hillsides. A drain running straight up and down a slope draws water from both sides, whilst one run around a hill only drains the upper side of it. Let the drains run straight into the main drain and let the main be large enough to carry the water and run it straight to the outlet, which should be a perfectly open place, where no silt or trash can accumulate. Crooked places in drains are sure sooner or later to stop up the drains and render them useless. On all galls and gullied places spread a dressing of barn-yard manure and strawy trash, so that the spot may commence to have some vegetable matter got into it. This after the deep breaking is what it needs to make it fertile again and stop washing.

If you have not already started a system of rotation on the farm plan for one now for the coming years. Lay off the land to be cultivated into as many fields as you wish your rotation to be years long. If a three course rotation is decided upon lay off three fields and so on for a four or five or six year course. A four or five year rotation is, in our opinion, as short a one as ought to be adopted except it may be upon the light soils of the coast sections, where a grass sod will not hold on the land. On the heavy red lands of the western parts of the State, where grass holds well, even a six or seven year rotation will be found profitable.

Get the manure out from the stables, barns and pens as it is made whenever the weather and the condition of the land will permit of hauling. The less the manure lays in the yard the less will be the

loss of its plant food. Get it on to the land to be planted in corn, where not wanted as a top dressing on wheat or oats. It will always pay on the corn crop better than any other fertilizer. It is equally valuable as a top dressing for wheat and oats, and if got on before severe freezing weather sets in will largely prevent heaving of the land and winter killing of the crop. Much time may be saved in spring, when work of all kind presses, by utilizing the winter months in getting manure and fertilizer on to the land. The mineral fertilizers like acid phosphate and potash may be safely applied to the land in winter without fear of loss from leaching. They require time to become available for the plants, and will help the crop better when applied some time before the crop is planted. Bone meal, tankage and cotton seed meal may also be safely put on the land some time in advance of the planting of the crop, as these fertilizers must first decay before they are available to the plants, and this process of decay is very slow in cold land. Nitrate of soda should never be applied until after the crop is planted and has made a good start in growth. It is as soluble as salt, and the nitrogen in it is immediately available to the plants, being in the form in which plants take nitrogen. Unless the root growth is active this nitrogen may be easily lost by leaching.

Ditches and drains should be cleaned out and new ones made where needed. All wet fields and wet places in fields should be underdrained where practicable. The drains in these places should be put down deeply, not less than 36 inches. It is the underlying water which causes the trouble and not that on the surface. Get the stagnant, underground water away and that which falls on the surface will soon find its way into the ground and leave the land dry and sound. After draining these fields and places give a dressing of lime at the rate of 25 or 30 bushels to the acre. This will sweeten the land, which is almost invariably sour when water soaked.

Clean out the ice pond and ice house and be ready to harvest the ice crop as soon as it is made. Farmers in the South cannot afford to miss the first opportunity to get ice, as a second may not come here. See that all sources of pollution are cut off from the ice pond, so that only pure water is frozen. Ice made from impure water is always dangerous to use. If you have no ice house, have one built above ground. This need not cost much, as all that is needed is a double framed building set on high, dry ground,

where the bottom of the house can be kept free from water. Put in a drain into the middle of the house and let the ground slope from each side to this drain, and put a trap in the drain to exclude the inflow of warm air. Then put over the ground a slatted floor raised six inches above the ground, so that the ice will be kept dry in the bottom. Build the house exactly as you would build any other frame building, only make the space between the inner and outer framing 12 inches apart instead of 4 or 6 inches. Fill in this space with sawdust and put a double roof on the top, with a similar 12 inch space between the inner and outer roof. Pack the ice solid and cover with 12 inches of sawdust. See that the roof is well ventilated by having a slatted window in at each gable so that no warm air may accumulate there. Put a double door with a 12 inch space between the inner and outer door.

See that a plentiful supply of well seasoned wood is in the wood-house so that the housewife is not pestered with growls about a cold house or prevented from having the meals on time by reason of having to cook with wet or unseasoned wood. This will save much temper and unpleasantness.

May the Christmas be a merry one and the New year a happy and prosperous one.

WINTER PLOWING.

In our last issue we urged that when it became too late to sow even rye on land intended to be cropped next year, that the work of plowing the land should not be neglected, and that this plowing should be deep, and wherever the subsoil was a good one—that is to say, having a clay basis and not leachy—this deep plowing should be also supplemented by subsoil plowing. In taking up this position we knew that we ran counter to the opinion of a very large proportion of Southern farmers, and we have been criticized frequently as to the soundness of the advice given. This is no new opinion of ours, but one at which we have arrived after mature consideration and a careful examination of the principle involved, and also as the result of practical experience. Those who object to the advice mainly base their objections on the ground that the only value of deep winter plowing is that it admits of the frost getting more easily and deeply into the land, and thus more completely and thoroughly disintegrating the soil, and

that as we have, as a rule, only very little hard frost in the South, the benefit to be derived is not commensurate with the labor involved, and that such labor is often largely wasted because the land has to be re-plowed in the spring before planting can be done. If the only value of winter plowing depended upon the freedom with which it permitted the action of the frost on the land then we should be prepared to grant the validity of the objection to it here in the South, as we do not usually have frost so severe or so long continued except in the higher elevations of these States as to be of great value in disintegrating the soil. But this action of the frost is in the South one of the least important of the benefits which the land derives from being deeply broken in the fall and winter. Prof. King, who is recognized as one of the leading authorities on soil physics in this country, says: "Over much of the Atlantic coastal plains and those sections of the South south of the old glacial borders and back from the Gulf coast east of the Mississippi *there is probably nothing which tends to deplete the cultivated fields of their fertility so rapidly as surface washing, and how to lessen this or to prevent it altogether is the most serious practical problem of soil management for that whole region. The compact, close structure, especially of the surface foot of these soils, their imperfect and feeble granulation, combined with the heavy, intermittent character of the rainfall, are the immediate causes of the destructive washing.*" An examination by Prof. King of the physical character of these Southern soils and those of many Northern soils shows that the Southern soils have much less pore space and openness than is characteristic of the best Northern soils. Prof. King says: "This openness of structure in soils is an extremely important character, for it determines not only their capacities for both air and water, but also the freedom and rapidity with which these indispensable component parts of all fertile soils move into and out of the root zone. It even determines in a very large measure the depth of the root zone itself, and thus the magnitude of the feeding area available to the crops, which, in turn, is a prime factor in determining the fertility of all field soils. Openness of soil structure and freedom of air circulation are recognized by all practical greenhouse men as indispensable prerequisites to successful results under their conditions. Not only do the soils of the North and the South differ in their openness of structure, but the soils of the South have a less complete and less strong granulation, and these two characteristics are extremely important in determin-

ing not only the freedom with which both rain and air enter and leave the root zone, but at the same time they influence the depth to which roots penetrate the soil. The larger pore space and coarser and stronger granulation provide greater capacity and better facility for the storing of the rain as rapidly as it falls, and as a consequence of this difference in the character of the soils in the two contrasted regions, there is better under drainage, less surface washing of fields and less loss of water soluble plant food in the North, while the roots of crops generally penetrate the soils much more deeply than they do in the South. Whenever heavy rains fall on the Southern soils under consideration their close structure and feeble granulation result in the surface pores of the soil becoming so quickly and extensively closed that the soil air finds little opportunity to escape, and yet only so fast as it does can the rain enter the soil, and hence during heavy rains the water accumulates quickly and extensively upon the surface. The result is that the surface soil after having lost much of its coarser granulation is readily taken up by the water held at the surface, and its finer and more valuable portions, together with the readily water soluble plant food and organic matter are borne away in the surface drainage to the great detriment of the fields. What, then, shall be done to establish a deeper openness and a coarser and stronger granulation in the soils of the South Atlantic and Gulf Coastal plains in order that there shall be lost in the surface drainage less of the most valuable portions of the surface soil, less of the undecomposed organic matter, and less of the readily water soluble plant food which collects on the immediate surface through rapid evaporation aided by capillarity? *There can be little doubt that deeper plowing will not only lessen the tendency of Southern soil to wash, but that it will increase their general productive capacity.* The deeper general plowing at frequent intervals will not only increase the effective openness of the soil, but it will greatly aid in developing a stronger and better granulation, and both conditions are necessary to reduce the tendency to wash." We have quoted thus at length from Prof. King because he states more cogently and succinctly than any other authority we know the true principles underlying the necessity for deep and frequent plowing of Southern lands. When can this deep and frequent plowing of our lands be best done? There can be no question that our fine, open winters are the best time. The land is then usually in a better mechanical and physical condition for plowing than at any other season of the year. It is neither too wet

nor too dry. A team can do a good day's work without being punished by the sun, and the man can do his duty with less physical discomfort. In this work the winter season can be profitably utilized and horses and mules instead of eating their heads off in the stable can earn their rations and contribute to the permanent improvement of the farm. Another great and important advantage secured by fall and winter plowing is that it enables all of the vegetable matter grown on the land in our genial climate in the late summer to be turned under when in the best condition for adding to the humus content of the soil. This addition of organic matter to the soil has great influence upon the soil granulation and water holding capacity of the soil, and upon these factors largely depends the crop feeding capacity of the soil. When once a better soil granulation has been established and the soil itself filled with vegetable matter, there need be no fear that plowing done in the fall and winter will necessarily have to be done over again in the spring before planting can be done. The surface may appear baked and dry, but the underlying soil and subsoil will be loose and open and working with a Disc, Acme, Cutaway or Spading harrow will be all that is needed to make a good seed bed. The moisture content of these fall and winter plowed lands will be much higher than those plowed just before being planted, and the crop feeding capacity of the soil and its availability through a hot, dry summer will be much greater. Especially is it important for Southern farmers to plow this winter because of the present low water content of the land. The rainfall through the South has been deficient all the past summer, and the soil and subsoil are both dry. This is evidenced by the failure of springs and wells throughout the section of which we have frequent complaint. If no special effort is made to conserve the winter and spring rainfall, but it is allowed to run off as it falls, which it must and will do unless the land is deeply broken, the chance of profitable crop production next year is likely to be a slim one. Get the teams to work and keep the plows running on every fit day so long as the land is dry enough, and the result will be a readiness for crop planting in the spring, which will then be appreciated when work presses on every hand, and a probability of crop yield, which will be appreciated when the time comes to harvest the crops.

TURNIP GROWING IN SCOTLAND.

We have often been amused hearing farmers say that they have grown a good crop of turnips when

they have made 200 or 300 bushels to the acre. The following report of the results of a turnip growing contest in Banffshire, Scotland, just decided will be an eye-opener to farmers here as to the possibilities of this crop when properly grown in a climate suited to its best development. Whilst many farmers here will, no doubt, be inclined to think that there must be some mistake in the weights of the crops grown in the contest, yet we can assure them this is not so, as we have often ourselves grown over thirty tons of Swede turnips (*Ruta Bagas*) to the acre. The contest reported was entered upon to test the value of sulphate of ammonia as an adjunct to farm-yard manure, as compared with farm-yard manure alone:

"The award has now been made in the competition held under the auspices of the Central Banffshire Farmers' Club for growing turnips with sulphate of ammonia. The prizes, given by the Sulphate of Ammonia Committee, have been gained as follows: Swedes—1 A. Wilson, Haughs, weight with ammonia, 37 tons 18½ cwt. per acre; without ammonia, 30 tons 10¾ cwt. per acre; 2 L. E. Longmore, Baldavie, with ammonia, 37 tons 1¼ cwt.; without ammonia, 29 tons 2¼ cwt.; 3 R. Allan, Bush, with ammonia, 36 tons 3¾ cwt., without ammonia, 25 tons 1¼ cwt. Yellows—1 T. Gordon Duff, Drummuir, weight with ammonia, 52 tons 11¼ cwt. per acre, without ammonia, 43 tons 10¼ cwt.; 2 J. Findlay, Aberlour Mains, with ammonia, 47 tons 14¼ cwt., without ammonia, 29 tons 15¼ cwt.; 3 L. Longmore, Baldavie, with ammonia, 45 tons 14¼ cwt., without ammonia, 39 tons 10¼ cwt. The judges say that the crops in general were very healthy; that Swedes were not nearly at maturity; and that turnips weigh in 23 pounds were not uncommon."

The heaviest crop of Swedes (*Ruta Bagas*) grown (37 tons 18½ cwt.) is the equivalent of 1,544½ bushels of the standard Virginia weight. The heaviest crop of Yellows (turnips such as are commonly grown here (52 tons 11¼ cwt.) is the equivalent of 2,140¾ bushels of legal standard Virginia weight. It will be seen that the sulphate of ammonia used materially increased the yield per acre. We do not doubt but that when the Swede crop completed its growth that it would exceed the weight per acre of the yellow turnips. Swedes will grow much later and keep much longer than the yellow turnips. It is upon such crops of turnips as these that Scotch and English stock breeders keep and feed their prime beeves and sheep during the winter months.

SOME PASSING NOTES.

Editor Southern Planter:

Your remarks on the manure heap in the November number should be read more than once by every thoughtful Southern farmer. The mischief that has been wrought in the South through the improvident use of commercial fertilizers has not been due to the fertilizers themselves, but to the lack of intelligent study of soils and their needs, and the utter lack of an intelligent rotation of crops and the maintaining of the humus in the soil. And there is right where the difference between stable manure and fertilizers comes in. It is not in the amount of nitrogen, phosphorus and potassium that are available in the manure, but to the maintaining of the nitrifying bacteria and the moisture retaining humus that its special value is due. This is what makes the manure so lasting in its effects. But, as we have often said, where a farmer cannot feed stock at a profit he can come nearer replacing the manure with commercial fertilizers if he uses only the mineral forms of potash and phosphoric acid to increase the production of the legumes. The work at the State Farm of the North Carolina Board of Agriculture, in Edgecombe county, demonstrated this very plainly, for it was shown that a far larger crop of cotton was grown after a fertilized crop of burr clover than was produced by direct fertilization. When Southern farmers realize that they are wasting their money in the purchase of nitrogen that they could get free, and that the true use of fertilizers is to improve the land through the increased growth of the legumes, there will be perhaps less money spent for fertilizers, and more used of a cheaper form, and the resulting crops of legume hay will enable them more profitably to feed stock. In fact, when a farmer has a great store of feed he will be certain to want to feed it, and the getting of the feed is the first thing to do, and fertilizers properly used will enable him to do this and to increase his humus at the same time. Another thing farmers everywhere need to learn, and this is that a manure heap is a bad thing to have, and that the only true way to get the best results from manure is never to have a heap, but to get it out where some plant is waiting for it as fast as it is made. My advice about the manure heap, then, is never to have one, for no matter if the manure is spread on the land and lies there all winter, it will do more good and go further than if allowed to waste in a heap.

The advice of the Ohio Station on the use of fertilizers coincides with what we have been insisting

Mention THE PLANTER in corresponding.

upon for years, a short rotation and plenty of legume crops. The sixth section is particularly to be studied. If a farmer does not raise manure enough to carry out the three year plan of manuring the corn field, we agree with the Ohio Station that it is time to readjust his system. Then, too, Dr. Thorne's further statement as given at the Ohio Fair, shows what we have been insisting upon, that a manure heap is a bad thing to have when there is nearly \$1 difference between the value of manure per ton that has lain in the barnyard and that which was hauled and spread.

Dr. Kilgore's bulletin on burr clover is worth a study. Burr clover being a sort of annual alfalfa (*Medicago denticulata*), it was to be presumed that the bacteria that lives on its roots would also live on alfalfa. Then as the burr-like seed carries the bacteria of the burr clover, it becomes an easy matter to inoculate land for alfalfa by a preceding crop of burr clover. The demonstration of this fact is one of the most valuable recent contributions to the culture of alfalfa.

We have seen what Mr. Blacknall has done, and the strawberries he grows on what were extremely poor hillsides, and his experience adds a testimony to the value of the cow pea.

You are right in telling Mr. Ingham that currants and gooseberries are useless in the South. I had some, years ago, at the Station farm, and finally dug them up. In my home garden I had a gooseberry bush that grew and flourished finely, and in six years gave me *one gooseberry*. They invariably bloom here in the winter and get killed, and if they did not do this they would fail from mildew. Mr. Ingham thinks that low headed trees could not be cultivated. Inasmuch as there is not a particle of need for cultivation closer than the extremity of the limbs where the feeding roots are, this is hardly an objection, and low trees are essential to success in the South. We head all our trees twenty inches from the ground. After an apple orchard gets well grown there is no further need for cultivation if the grass is kept mown and used as a mulch. I have been advocating this for thirty years, and of late it has been discovered to be an entirely new idea that some Ohio growers have adopted and are succeeding with. I think that it was the Rural New Yorker that recently published cuts showing one of these low headed and mulched trees, with limbs sweeping the ground, and another cut showing what the writer seemed to think a model tree with a tall stem, and the suggestion was: "Which would you take." I would certainly take the tree

with the limbs touching the ground as the best tree in every respect.

Now, as to the influence of the Stock on the graft, I do not believe that the stock does anything but enable the graft to get food from the soil, and to grow, and its subsequent growth covers the stock with new layers of growth of whatever the top is. A pear on quince roots overlays the quince with successive layers of pear growth, and a longitudinal section will show that the pear growth is perfectly continuous clear to the remotest rootlet. Pear leaves cannot elaborate anything but pear sap, and they do not form any more quince cells. There may be an adventitious bud on the quince root, and if this is allowed to grow and make leaves there will be more quince roots formed, but if there is no growth above except pear, the subsequent growth will be pear and not quince on root as well as top. I stated this at the Roanoke meeting of your Horticultural Society, and one gentleman said that he had cherries on mazzard stocks that made mazzard sprouts thirty feet from the stem. I do not doubt this, for in all probability they had been allowed to make sprouts from the first, and the mazzard sprouts made mazzard roots to sprout more. But where no growth is made from the stock there can be nothing but what the top is, for roots are the product of stems.

W. F. MASSEY,

Editor of Practical Farmer.

REPORT ON INOCULATION OF SOY BEANS AND OTHER LEGUMES ARTIFICIALLY.

Editor Southern Planter:

The land upon which the beans grew is miserably poor, having been planted in corn continuously by a former tenant for years without any manure or fertilizer applied. I am quite certain that soja beans had never before been grown upon it, therefore no chance for the bacteria to be naturally in the soil. The soil is a sandy loam, with subsoil of yellowish color. The beans were drilled in rows three feet wide, with a small quantity of 8.1.1 fertilizer mixed with some hen manure and loam, perhaps of the mixture 200 pounds to the acre. Soil was treated as directed by the Department of Agriculture, soaking for a short while in mixture, balance of water was mixed with the above composition of fertilizer and drilled upon the plants at first working, cultivator following immediately after covering. The season has been a most propitious one for a luxuriant growth. The best land had the most luxuriant growth. On the poorest parts there were few no-

dules on the roots. A neighbor who grows these beans every year had a beautiful field, the roots covered with large nodules. He says he never fails to find them, though without inoculation. Of the yield of beans I cannot say.

Canada Peas.—Wet spring prevented sowing.

Navy Beans.—Used the bacteria in the same way as for the soy beans. Result negative. Much same quality of land. Could find no nodules.

Cow Peas.—On land where this crop had been grown last year sown at last working of the corn and manured the growth was luxuriant and many nodules. On poor land, very poor crop. A good many died after coming up, without sign of nodules.

Butter Beans.—Two rows luxuriant; very productive. On poor land crop very poor.

Red Clover.—This was on a piece of new ground. Two houses had stood upon part of the land, and there the clover was good and had nodules. Very patchy elsewhere. The bacteria was applied to all the crops in the same way as described for the soy beans. Soy beans invariably seem to answer on this land. Whether the bacteria increased the growth is hard to say. From my neighbors' experience I think the soy bacteria must be already in his soil.

Henrico Co., Va.

JOHN COWEN.

ENQUIRERS' 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.

We have several letters containing enquiries to which answers are desired to which the names and addresses of the senders are not signed. In accordance with our rule, these are not answered. As an evidence of good faith and for our own protection, all letters sending enquiries must be signed by the writers and their addresses be given. If the writers do not desire their names published we are always glad to oblige them, leaving them free to sign with an assumed name or initials.—Ed.

Thistles.

A subscriber asked us recently how to get rid of thistles. We replied we knew of no way but cutting them down and preventing seeding. We asked for the opinion of others on the subject. One gentleman writes us: "Cut them off with the hoe twice a year and never let them seed. Have killed fields of them in this way."—Ed.

Charges for Sale of Live Stock.

Replying to an enquiry as to the charges on the sale of live stock at the Pittsburg market, we publish the following information supplied to us by the Secretary of the Live Stock Exchange, Pittsburgh:

LIVE STOCK.

YARDAGE CHARGES AND COMMISSION RATES.

	Per head.
Cattle, yardage and scale.....	15
Hogs, yardage and scale.....	6
Sheep, yardage and scale.....	6
Calves, yardage and scale.....	8
Feed—Corn, \$1.25 per bushel; Hay, \$1.50 per hundredweight.	

Commission for selling live stock shall not be less than the following rates:

Cattle, per car load.....	\$10 00
Hogs, per double deck.....	10 00
Hogs, per single deck.....	6 00
Sheep and lambs, per double deck.....	10 00
Sheep and lambs, per single deck.....	6 00
Two single decks when billed as a double deck	10 00
Calves, per double deck.....	15 00
Calves, per single deck.....	8 00

Fresh cows, less than car load lots shipped or driven in (not mixed cars), 75c. per head; mixed cars, 50c. per head for cattle up to 10 cattle, and \$5 for the balance of car.

When a part of a car is double decked and loaded with sheep or hogs, the commission on such car shall be in proportion to the single deck rate not to exceed \$10.00.

Growing Onions from Plants.

Kindly answer the following questions. Wish to plant a half acre in Yellow Globe Danvers onions from sets grown in cool frame covered with sash:

1. Will cool frame answer or must I sow in hot bed?
2. How much seed will it require to raise enough sets for a half acre sown under 9 3x6 sash?
3. What time must seed be sown, and when must sets be transplanted?
4. What kind of fertilizer must be used, and how much? Land was previously planted in sweet potatoes and sugar corn, and was then covered with well rotted stable manure and plowed down.

Lunenburg Co., Va.

SIMON ZIRKNITZER.

We understand our enquirer to mean that he wishes to grow the onions from seed, not "sets." He uses the word "sets," but from the context we take it he means "plants," and so reply. We would say at the outset that we think it probable he would find

Pearl or Southport White Globe better varieties to grow in the way proposed than Yellow Danvers.

1. Yes, we think cool frames will answer. The plants should be ready by the time the weather is warm enough to grow them outdoors.

2. About one pound of seed will be required. The half acre will require about 60,000 plants to set it, and a pound of seed should grow this number.

3. Sow the seed in the middle of February and commence to set out the plants in April if the season is a favorable one. They should be about as thick as a pencil then, and should be well hardened off before being set out. Make the rows twelve inches apart, and set the plants four inches apart in the rows.

4. You should apply about 500 pounds of fertilizer to the half acre in addition to the manure you have already applied. Make this 500 pounds of the following ingredients: 50 pounds nitrate of soda, 200 pounds cotton seed meal, 200 pounds acid phosphate, 50 pounds of muriate of potash.—ED.

Sow Failing to Breed.

I have a Berkshire sow 11 months old last Christmas, weighing 200 pounds then and fat. She farrowed with difficulty; pigs came dead; since then she has been in a lot with a fine boar, but has not become with pig, notwithstanding she has been served almost weekly by the boar. No question about the male's fertility. The sow is not too fat. Would be glad to have your advice in the matter. SUBSCRIBER.

Halifax Co., Va.

We think it likely that the sow was injured by the difficult farrowing of the first litter, and if this be so, it is not probable that she will ever breed again. The only suggestion we can make likely to help would be to take the sow away from the boar for a couple of months, and then let her be served once only. If she then fails to breed make her into meat.—ED.

Corn and Annual Clover.

In your October number you answered my inquiry about corn. I would like to ask a few more questions. You say 300 pounds of acid phosphate and 50 pounds of muriate of potash per acre, and the next year follow with 50 bushels of lime. Do you mean not to put anything else but the lime? Or do you mean put 50 pounds of potash? Please let me know if you think this is full quantity of fertilizer to get the best results.

J. L. CAMP.

Southampton Co., Va.

We believe that with the application of the acid

phosphate and potash one year and the lime alone the next and the plowing down each year of a crop of crimson clover, you will be able to continue your system for years without depleting the fertility of the land. By heavier fertilizing for the corn crop, say with barnyard manure or with a complete fertilizer, say 300 pounds of acid phosphate and 50 pounds of muriate of potash at the planting of the crop and a top dressing of 100 pounds of nitrate of soda after the crop has commenced to grow, you could no doubt increase the yield of the corn crop, but except with barnyard manure we doubt whether it would be done profitably. We rarely find fertilizers profitable on corn.—ED.

Improving Land for Peanuts and Corn.

What kind of chemicals ought I to use on my land to increase the yield of corn and peanuts? My land is not hard and stiff nor do we call it sandy land. In digging holes in the ground I find when I get 12 or 15 inches I come to clay. We use marl, as lime costs so much, and I wish you would say what I ought to use and how much to put to the acre and how it ought to be applied and what time of year and where I can buy the chemicals, and about what they will cost me per ton. Would it pay to subsoil light or sandy land?

S. B. EDWARDS.

Surry Co., Va.

What the farmers in the peanut sections of the State most need in order to enable them to get heavier yields of nuts and better crops of corn is a longer rotation of crops on the land. The growing of peanuts and corn in succession year after year has caused the natural humus of the soil to be so burnt out of the land that it has become in many cases little more than a sand bed. The physical and mechanical condition of the soil is so deteriorated that it is impossible to make the yields which should be made. In addition to this the natural supplies of the mineral fertilizers have also been so depleted that the small annual applications made of mixed commercial fertilizers fails to give the needed support to the crop. The fertility is unbalanced, and only such a yield is possible as can find food sufficient in the least abundant of the mineral supplies of plant food. To correct these deficiencies the land should have a dressing of lime at the rate of 25 bushels to the acre or a corresponding heavy marling. This will improve the physical condition of the soil by making it more cohesive and capable of holding fertility. Where land has been in peanuts it should be followed by a crop of crimson clover and wheat, oats and rye mixed. This crop will give good, early spring grazing for

hogs and calves, and should be plowed down and followed by corn. At the last working of the corn sow crimson clover, and in the spring plow this down and prepare and plant the land in sweet potatoes and then sow crimson clover to cover the land in winter, to be plowed down in the spring and be followed with peanuts again. As to the fertilizer to be used. A crop of peanuts of 60 bushels to the acre requires for its production 85 pounds of nitrogen, 15 pounds of phosphoric acid, 32 pounds of potash, and 46 pounds of lime. A large part of the nitrogen required is obtained by the plant from the atmosphere, but the other constituents must be got from the soil, and if not already there in available form, must be supplied in the fertilizer. The following formula will meet the requirements of the crop: 80 pounds of 14 per cent. acid phosphate, 300 pounds of cotton seed meal, and 65 pounds of muriate of potash. These ingredients can all be bought in Norfolk from parties whose advertisements will be found in this issue of THE PLANTER, Messrs. Percy L. Banks and T. C. Andrews & Co., They will gladly quote you prices. As the prices vary in the market from day to day it is useless for us to quote you. In addition to the fertilizer used on the peanuts, we would advise the use of 300 pounds of acid phosphate on the crimson clover crop to ensure a good growth and thus help the corn crop.

It is doubtful whether it would pay to subsoil sandy land where the clay is so far below it as you describe. It might be worth while to try the experiment on a small plot. If there is a hard pan anywhere under the land it would pay to break this with the subsoiler and thus be able to increase the depth of soil and feeding area of the crop.—ED.

Smoke House—Curing and Smoking Meat.

Will you please advise in regard to building a smoke house and salting and smoking meat? How large should a smoke house be, say to smoke from 30 to 40 hogs, and how long should meat stay in salt before smoking, and how long ought it to be smoked?

FRED. BELCH,

Manager for David Dunlop.

Charles City Co., Va.

We asked our friend, Mr. J. O. Thomas, of Smithfield, the most successful curer of Virginia hams, for his views on this subject. He writes us as follows, for which we tender our thanks:

A smoke house to hold the meat of 40 hogs, I think, should be 14 feet square, 12 feet pitch—that is, 12 feet from the sills to top of plates, with sharp roof

covered with shingles, the building underpinned with brick or stone. The house should be built tight, so as to be dark and be kept clean. Smoke slowly so that the meat will not get warm, and smoke two or three weeks, or until the meat is colored to suit. Meat should lay in salt from three to five weeks, according to size of meat. Pork should never freeze. Never use lightwood to smoke with.

J. O. THOMAS.

Corn Stalks.

How is the best way to handle a heavy growth of corn stalks? By plowing them in or cut them down and allow them to remain on the land for fertilizer? I would like to know the best way to get clear of them for next year's crop.

J. L. CAMP.

Southampton Co., Va.

This is a problem that is difficult of solution for your section. No doubt the proper way to handle the stalks is to cut the corn down at the roots and run the crop through the husker and shredder and feed the shredded fodder to stock. But in sections like yours, where the tall Southern corn grows so luxuriantly, and where not sufficient stock is kept to consume the fodder, it becomes a problem how best to get rid of the stalks. They ought to be returned to the land in some form. There is a machine on the market for breaking down and cutting up the corn stalks so that they can be conveniently plowed under. Perhaps this would help you.—ED.

Lime for Corn Land—Paragon Chestnuts.

1. I have a piece of land that I had in corn this year, and wish to put it in corn next year. Will lime be all right to use on it, say twenty-five or thirty bushels per acre, or ought I to use more? I also have a quantity of stable manure that I want to put on it, will it do well to use them together?

2. Where can I get the Paragon chestnut scions for grafting purposes, and will they do well in this country?

J. G. COX.

Carroll Co., Va.

1. It is poor farming to follow corn with corn. Not until Southern farmers learn to practice rotations suited to the section in which they farm will they succeed as they ought to do. No land, however good, ought ever to grow the same crop two years in succession. It means impoverishment of the natural fertility of the land, however the land may be artificially supplied with food. If your land has not been limed recently it will very likely respond to an application of lime given at the rate you suggest. This lime will improve the mechanical and physical

condition of the soil and will release and make available natural fertility inherent in it. The land should be plowed at once and the lime be applied as soon as plowed and be harrowed in lightly. In the spring just before planting the corn you may apply the stable manure without fear of loss, but if applied at the same time as the lime or even shortly afterwards much of the nitrogen in the manure will be lost.

2. We believe Messrs. W. T. Hood & Co., Nurserymen, of this city, whose advertisement you will find in THE PLANTER, have the Paragon chestnut, and can possibly supply you with scions. It is said to do well here.—ED.

Diarrhoea in Chickens.

Can you tell me what will prevent young chicks from getting the diarrhoea? I have trouble with them when they get two days old.

Gloucester Co., N. J. FRED. SCHWARZ.

Diarrhoea in young chickens is almost invariably caused by cold and damp or by injudicious feeding. Young chickens must be kept both warm and dry if they are to succeed in making the race for life. Feeding wet and sloppy feed is also a prime cause of this disease. Oatmeal grits, or cracked wheat or rice are the best feeds for young chicks. These should be varied with wheat bread crumbs soaked in milk and squeezed nearly dry and fed fresh. Sour food of any kind will also produce diarrhoea and other troubles. Let them have plenty of grit and a little bone meal in their food once a week.—ED.

Artichokes.

Can I plant artichokes after Irish potatoes? My intention is to plant the potatoes at the end of February or beginning of March and after digging, about May, to plant the artichokes in the same ground. Would you advise to use fertilizer before I plant artichokes?

A SUBSCRIBER.

Bedford Co., Va.

It will be too late to plant artichokes after Irish potatoes are dug. Artichokes should be planted in March or April at the latest.—ED.

Preparing for Alfalfa.

We have an old meadow on our farm which has been neglected for twenty years or more. It is bottom land with a good-sized stream of water running through it, and has been producing the poorest quality of hay, most of it being wire grass. Its area is about 51 acres, and it is about 1,600 feet above sea level. I have tile drained along the foot of the hill and from the low, wet spots, and wish to plow it up

and put it in corn in the spring with the idea of following it with alfalfa. When we bought the farm two years ago I planted a small experimental patch of alfalfa with a worse crop of wheat (through ignorance), but in spite of this and no attention the first season I have secured a good stand, which I cut three times this season.

This meadow land is sour, and I wish to lime it well. Will you kindly give me your opinion on the following points:

1. If I succeed in getting the land plowed by the first of January, should I lime it immediately or wait until spring?

2. Will 50 bushels per acre be sufficient?

3. Will land plaster in same quantity be as effective as lime, cost not considered?

4. What quantity and kind of fertilizer should be used?

5. Will burr clover planted at the last working of the corn produce a sufficient stand to turn under in the fall?

6. If clover is turned under will it sufficiently inoculate the land without sowing soil infected with alfalfa bacteria?

7. Will this land carefully prepared and cultivated for the corn, plowed up in the fall and disced, say four times the following spring and seeded and rolled be in fit condition to produce alfalfa or should it be cropped another season?

8. When the alfalfa is sown should the land be limed again or fertilized?

9. To turn to another subject. Can brood sows and pigs be carried to advantage through the winter months on a diet of ensilage, either corn silage or a mixed ration without other feed.

J. V. L. RINAHARD, Supt. of Property.

Augusta Co., Va.

1. Lime the land as soon as plowed.

2. Yes.

3. No. You want the carbonate of lime, not the sulphate.

4. We doubt very much whether the use of any fertilizer would be profitable on the corn crop. Of course you might by the use of fertilizer, say 300 pounds of acid phosphate per acre, applied broadcast a few weeks before planting the corn and a top dressing of 100 pounds of nitrate of soda applied to the corn just after it had commenced to grow largely increase the yield of corn, but it is very questionable whether this could be done with profit. Our experience always has been that the use of fertilizer on corn is rarely profitable. This land well limed should make a good crop of corn without anything else added.

5. No. This clover should stand a year to make

a cover sufficient to make any improvement in the land.

6. It would if the clover stood until the early fall of the following year, but not otherwise. As you have a field of alfalfa you can easily inoculate the land with soil from this field.

7. This depends on whether the land is badly infested with weeds. If so, it should be cropped another year and be fertilized with barnyard manure, if possible, and 300 pounds of acid phosphate per acre. If the land is clean when the corn crop comes off plow and work well during the fall and winter, and in the spring apply 300 to 500 pounds of bone meal to the acre, and sow the alfalfa bacteria and then the alfalfa. No further lime need be applied. In your section we think it will be safer to sow the alfalfa in the spring rather than the fall, unless the seed can be got in in August.

8. See last answer. We do not think you need to apply any potash in your section in the fertilizer used at any time. The lime will make available the potash naturally in your soil.

9. No. This experiment has been tried. They cannot eat enough of the food to meet requirements. It is useful as an addition to the ration, but the sows and pigs should have other grain feed, the best being a mixture of ship stuff and a few peas.—Ed.

Improving Land in Alabama.

I own a forty acre lot in Southern Alabama, in what is known as the long leaf pine belt. Top soil is about three to four inches deep (sandy loam), with a red clay subsoil. I am having the land cleared of stumps, etc., and was about to adopt the following method to put the land in proper trim for any kind of crop:

First. To turn over top soil with turning plow, and have subsoil plough follow to a depth of 10 or 12 inches, and fertilize and plant, but have been advised to use a turning plough only and plough to a depth of ten inches, turning top soil under and then fertilize and sow to velvet beans, and when the beans are ripe to gather the seed and plow the vines under, bringing the original top soil to the surface again.

The idea is to dispense with the subsoil plow in order to save the price of the plow, and also to save cost of extra man and horses to operate it. I want to make the land good enough to grow anything. Please advise me through the columns of PLANTER how to proceed to obtain the best results.

Pullman, Ill.

BACKWARD.

We doubt very much your being able to grow a good crop of velvet beans on this land by plowing the land 10 inches deep and then fertilizing and seeding the beans. There will be too much of the subsoil turned

up to become fitted to give up its plant food the first year. Better plow the land 6 inches deep and subsoil another 6 inches and then sow the velvet beans with some acid phosphate applied broadcast, say 300 pounds to the acre. Let this plowing and subsoiling be done at once, so that the weather may have time to act on the subsoil brought up. In plowing with the turning plow do not turn the furrows right over, but leave on edge and thus permit of the mixing of the surface and subsoil by harrowing. Harrow well and make fine before seeding the beans. Let the vines mature well before turning them down, and then the year following you should have a piece of land capable of making a fair corn crop.—Ed.

Red Clover—Lawn Grass.

I have been an interested reader of your valuable journal for about a year now, and feel that I have been greatly benefited. Please answer the following questions through your next issue:

1. Is it possible to get a stand of red clover sown about the 15th of October on land pretty well adapted to that legume?

2. What is the best method to follow in order to get a stand of grass on a lawn where there are oak trees, the kind of grass most adapted, and the most suitable time to sow? SUBSCRIBER.

Pittsylvania Co., Va.

1. If the winter should be a mild one it may be possible to secure a stand of clover in your section sown as late as October 15th, especially if lightly top dressed with barnyard manure. If the winter be severe this is doubtful. Red clover should be sown in the fall not later than September, and better in August, so that it may get good root hold before frost.

2. Grass seeded for a lawn should be sown in August or September, and the land should be well prepared and made as fine and rich as possible with barnyard manure and bone meal before seeding. Sow at least two bushels of seed per acre. The best varieties to seed for this purpose under shade of trees are Wood Meadow Grass, Virginia Blue Grass and Perennial Rye Grass.—Ed.

Fumigating Stable and Barn.

I have thought of fumigating my stable and barn by burning sulphur in it, but as I have a lot of fodder and hay stored in the loft, I want to ask you if the fumes would ruin the feed? F. C. L.

Albemarle Co., Va.

No; we dont think the fumes would in any way injure the feed. It would, no doubt, make it smell for a time, but this would pass off.—Ed.

Trucking, Garden and Orchard.

WORK FOR THE MONTH.

The fine, open weather we have had during November has permitted of the planting out of large areas of cabbages for the spring crop, and these are now making quite as much growth as is desirable. When cabbage plants become too much grown in the early winter they rarely winter well. They should just get good root hold of the ground ahead of the frost and then they are ready to grow right away when the spring opens. Where the work of planting the cabbages has not been completed it should be pushed on at once to completion or frost may largely delay it and cause a late crop, which never sells well. Do not spare the manure or fertilizer. Make the land rich and work it well. In our last issue will be found advice as to the fertilizer to use in addition to manure.

Lettuce plants should be set out in the cold frames as fast as the plants are ready. Never set lettuce plants in the old soil of the frames, as it is very likely to cause rot. Fill them with new compost, clean, friable and rich in plant food. Where the plants are already set out they should have plenty of air given all fine days, but be kept covered at night, and mats and straw should be handy to cover the frames in case of severe frost.

Provision should be made for protecting cabbage and lettuce plants in the seed bed in the event of severe frost. Pine branches put around the beds and in amongst the plants and a little straw thrown over these is usually sufficient in this latitude to save them from serious injury.

In Tidewater and Southside Middle Virginia and Eastern and Middle North Carolina Irish potatoes may be planted in this month for a very early crop. This crop requires special planting. The rows should be opened very deep, and the bottom of the rows be broken loose with the cultivator and a good potato fertilizer be mixed with the soil. The sets should then be dropped in and be covered with a light covering of soil, and this be covered with a thick coat of manure, and then soil be plowed on to this in a ridge over the potatoes. This ridge should be harrowed down in the early spring.

ONIONS FROM SETS AND SEEDS.

Editor Southern Planter:

To-day (October 10th) I am planting my last lot of onion sets. A few of the Early Queen sets were planted in September. These we are now setting are the Yellow Potato onion. These will give us green bunching onions nearly as early as the Queen, and they differ from the sets grown from seed in that they will make a good, mature onion if not sold green, while the sets raised from seed are very apt to run to seed and become worthless. There is still plenty of time for planting the Potato onion. It is quite hardy, and winters well. We set them in shallow furrows, and then throw two light furrows over them so as to form a ridge. This is for winter protection. In the early spring this ridge is pulled away, leaving the onions to bulb nearly on top of the ground. They will go into bunches as soon as about the size of one's thumb. The soil where we are setting these onions is a strong clayey loam, and not the best soil for onions if we could do better, for we would prefer a sandy loam for this crop. The potato onion is the only one we grow mature onions from for the use of sets. It multiplies at the base and makes no seed, and therefore must be grown from sets. For a ripe crop of other onions we always use the seed in the spring. The potato onion makes the earliest mature onion on the market, but as it is not a good keeper it must be sold before the northern seed crop onions come in. The piece of land we are setting to potato onions is as we have said a strong clay loam. The onion, like all other bulbs, is fond of potash, and in order to do its best must have an abundance of this material at hand. Happening to have a lot of tobacco dust, which is rich in potash, we have given the onion land a dressing at rate of about a ton per acre. In addition to this the furrows get about 500 pounds per acre of a mixture made up of 900 pounds of acid phosphate, 700 pounds of cotton seed meal and 400 pounds of muriate of potash to make a ton. This is our general formula for garden vegetables, and we have not yet found anything in the shape of a commercial fertilizer equal to it. We have found the same well adapted to the tobacco crop by changing cotton seed meal to dried blood and the muriate of potash to the high grade sulphate. But for growing a crop of onions to market in a cured state we would never use the sets. It was formerly the notion that good onions could not be produced in the South in

one season from seed, but that it was necessary to use the sets. This is altogether a mistake, for we can grow as good ripe onions in the South from the seed the first season as can be grown anywhere. The difficulty heretofore has been that the growers followed too closely the Northern methods and sowed the seed too late so that they ripened into sets instead of onions. Given a good warm sandy loam and about 1,200 pounds per acre of the fertilizers mentioned above and the seed sown as early as the ground can be gotten into good order, and the plants well thinned and properly cultivated, we can grow as fine crops of onions in the South as can be grown elsewhere. In all the coastal plain in the South Atlantic slope there are thousands of acres of black, peaty soils that have been reclaimed from the great swamps which, when well underdrained, will make the finest of onion land, and there are few market garden crops that will prove more profitable.

To grow onion sets from seed, select a piece of warm, sandy soil of fair fertility, and sow in April, without fertilizing, at rate of about 60 pounds of seed per acre. In fact, fill the shallow furrows marked out with a garden plow one-third full of the seed, so that the young bulbs will be badly crowded and kept small. These are ripe in July, and should be stored with their dry tops on, as any onion will keep better with the top left on. Clean out and plant these sets from September to last of October for early green bunching onions only. The best variety for this purpose is the Queen, sometimes called the Pearl. This is a very early bunching onion, and we frequently have them ready for market late in February. They must all be used or sold before the last of April, as they rapidly run to seed and become worthless as the weather gets warm, while the potato onion makes a fully matured crop. Home grown sets are better than those from the North, as they ripen earlier in the summer and start earlier in the fall.

W. F. MASSEY.

RANDOM THOUGHTS.

Editor Southern Planter:

Before another issue of the *PLANTER* appears one more mile post will be past, one more harvest season will have come and gone. How much better off are we? How much effort have we put forth? How much have we learned during the year? Balance accounts now and try to settle up with the world. The year has not been a good one for the Virginia orchardists, while the "general" farmer has been more

successful. All have had some success, for which we should be thankful, and all have made some failures, from which we should learn important lessons.

After settling up with the old year, plans should be made at once for the new one, while lessons learned from the old are fresh in our minds. After finishing an Agricultural College Course, teaching in a college, conducting scientific investigations along Horticultural, Entomological and Mycological lines, and then returning to my farm three years ago for renewal of boyhood strength and energy, I find that my brain capacity has never been taxed more than it is on the farm. Young men, you have a lesson to learn. Start to the Agricultural College at the opening of the term first of next January to make preparation for your life work. Brain work pays far better than muscle work.

There are tools on the farm that need repairs. There are buildings to be repaired, orchards to prune and clean up, and spraying machinery to put in order. All these things we can do while the winter winds sweep across the fields. But the rush of farm work is over, and the farmer will spend much time with the family around the hearthstone or heater. In the afternoon late the children will come home from school with their books, slates and pencils. Will the father help them with their hard examples and difficult lessons? This is the most important crop that grows on the farm, and should have the best of attention. The farmer himself might spend valuable time in reading the Farmers' bulletins issued by the United States Department of Agriculture or by taking some Farmers' reading course, such as that issued by Cornell University. His mind development is his bank account. Mind training can be turned into money, and it saves money. If we do not read during the winter months the year is apt to pass by and leave us with but little mental improvement. The growing season is too inviting for us to be among the stock, in the meadows, grain fields and orchards for us to sit down and be contented with a book. Now all is changed, and let us "have school" at home.

R. H. PRICE.

Montgomery Co., Va.

RESULTS WITH JAPAN PLUM ORCHARD IN CONNECTICUT.

Editor Southern Planter:

I promised to give results of my 1,425 Japanese plum orchard, and here it is. The orchard covers five and one-half acres, the trees are set 12 feet apart

in true rows at right angles: 100 Red Junes, 725 Burbanks, 500 Abundance, and 100 Wickson's. The first year after setting they blossomed full, but were frost killed. The second year they blossomed full again and produced 500 large baskets. The third year the blossoms were full, and the trees produced 1,500 large baskets. The fourth year the blossoms were full, but frost cut all fruit off. The fifth year the blossom were full and the trees produced 3,000 large baskets.

The plums, when allowed to fully ripen on the trees and sold in the home market, brought an average of about 45 cents per basket, but when picked greener, which is necessary for outside market, the net price was less, so that results were about as follows:

Total labor for the 3,000 baskets, fertilizers, etc.:	
Cost of fertilizers.....	\$ 50 00
Cost of sowing.....	3 00
Cost of cultivation.....	24 00
Cost of thinning plums.....	50 00
Cost of baskets and covers.....	125 00
Cost of picking plums.....	75 00
Cost of transportation, team, etc.....	48 00

Net receipts\$375 00

So far as I can see I came out square, the second and third year gave about the same results. I think if I had but 200 to 500 trees, just what I could handle myself with the aid of some light help, and the plums could be allowed to ripen more fully and with a home market, I could have done very well. The difficulty with my plums is they mature too quick. The Wickson's are the best in that respect; with them you have ten days to two weeks to handle the crop, but they are shy bearers. One has hardly a week with the Red June, Burbanks and Abundance, and a storm or two mixed in at that, as I had this year, limits the time. The only relief there was in the time of these plums was one week's difference in time of ripening, but for that I could not have handled half the crop.

Yours truly,
GEO. M. CLARK.

Higganum, Conn.

PICKING PEACHES.

Mr. R. H. PRICE, Blacksburg, Va.:

Dear Sir,—I have read with much interest your article in SOUTHERN PLANTER. Especially the one in the November number, in answer to M. B. Langhorn, Albemarle county, Va. I live near the Georgia line, and in what is now becoming a great peach

producing section. There are within six or seven miles of me thirteen peach orchards, all Elbertas, most of them bear this year for the first time, and for lack of knowledge, as how to handle the peaches, many of them did not get much out of their orchards. Let the peaches get too ripe and then hauled to depot in road wagons. There are several nurseries here, where Elberta peach trees, June buds, can be bought for \$3 per hundred. Yours truly,
Cleveland, Tenn.
HENRY D. AYRE.

I am very glad to get your letter, stating that the Elberta has borne well in your section of Tennessee, which is just as I expected. We are going to fruit it successfully on the dry, rolling, sandy loam soils of Virginia also, so that when your crop is gone we will follow with solid train loads from Virginia and further up in Tennessee.

The fact that June budded trees can be purchased so low as three cents a piece by the hundred, in your locality, will be a revelation to many of our growers, who are used to paying from ten to fifteen cents per tree. If these small trees are managed carefully next spring so as to get the "crown" properly started, I like them quite well, but most of our growers erroneously suppose that the largest trees are the best.

I am not at all surprised that your orchardists made failures in their first shipments by letting the peaches get too ripe. That is the usual result of the efforts of beginners. When shipping peaches myself while Horticulturist of an Experiment Station, I sent trial packages of my peaches in different degrees of ripeness to my commission house and asked them which packages they preferred. After getting this information, I had no further trouble with each variety, and my shipments took the lead in that market. It takes considerable experience to enable one to gather peaches rapidly with the uniform degree of ripeness to enable them to carry successfully one hundred or five hundred miles. Nearly always beginners let the fruit ripen too much. One good way to teach pickers successfully is to let each one gather and fill a box or crate with fruit he thinks would go to market successfully and put this package away in a room the same length of time it would be on the road to market, then let each man open and examine his own package. The experienced picker knows at a glance the fruit that is ready to pick. When the skin has that peculiar creamy white appearance, before any softness has set in, the fruit is ready to be picked for shipment. During very warm bright days the fruit should be less ripe than on rather damp, cloudy and cool days.

Elberta colors early, is an excellent shipper, and has a very attractive appearance, especially when grown on light, sandy soils. It is "a thoroughbred" among peaches. But I must state that I cannot recommend its table quality as being first class. As a yellow canning peach, it ranks high. Your growers should put up small canning factories for emergencies next season.

Come again.

R. H. PRICE.

FALL CROPS IN THE NORFOLK, VA., TRUCKING BELT.

Editor Southern Planter:

The fall crops of peas and beans have been shipped to Northern markets. The great trucking belt around Norfolk, Va., is now showing up green and luxuriant with the growing crops of kale and spinach.

The advance line, or skirmish line, of these great crops is now invading Northern markets, and quite large quantities of these crops are being sent North, thus early in the season. This shows two things—namely, it shows that the Northern green crops have all been cut off by Jack frost; and it also shows that the Sunny South is ready to supply all deficiency in the line of "garden sass."

The kale and spinach crop is unusually large in area, and is in most excellent condition. The prices are fair, and the shipping of these crops is beginning earlier than usual, and the prospect for profit is good.

The kale and spinach crop combined is good for five hundred thousand barrels, possibly six hundred thousand. The price received for kale in Northern markets varies from seventy-five cents to \$2 per barrel. Spinach, from \$1 to \$7 per barrel.

Kale yields all the way from 150 to 300 barrels per acre, sometimes more. Spinach from 100 to 250 barrels. These crops are cleared off in time for two more truck crops within the limits of a year—three crops per annum from the same soil.

Cabbages by the millions of plants are being set out in the open air, where they will take root and grow slowly all winter, and thus be ready for market next April and May.

Lettuce by the acre is also being transplanted. The two crops last mentioned are set out in the open air away up to the first of January. The near by presence of the "Gulf Stream," which slowly rolls along our coast, with its steady temperature of seventy degrees the year through, keeps off killing, damaging frosts, so that green stuff in the open air, such

as kale, cabbage, spinach and lettuce, etc., comes through the short, mild winter uninjured by frost.

The prospect for our farmers and truckers with regard to their fall crops of kale, spinach and lettuce is very good indeed. The area of these crops is large, the stand excellent, the growth very satisfactory, and the prospect for a good price and yield is very good indeed.

The weather is very pleasant, just bracing enough to be agreeable and still warm enough to be comfortable without any extra wraps, overcoats or heavy underwear. Light, wood fires are needed to take off the chill, but still everything in the ground is growing, and yet we have but very little evidence of winter. The tenderest vegetables, such as sweet potato vines, tomato vines, beans, etc., are nipped by frost, but yesterday we saw a large crop of peas where the vines were looking just as green as they look in April and May.

A. JEFFERS.

Norfolk, Va., November, 1904.

TRUCKING.

Editor Southern Planter:

Do not make the mistake of starting into the business of truck raising before you are ready. By so doing you simply invite defeat and a disastrous and expensive failure is, in the very nature of things, bound to be the result.

There are at least three *essentials*, the absence of any of which will pretty effectually militate against any possible profit from either market gardening or truck farming. These are:

1st. A sure and remunerative market for the products when raised.

2d. A thorough knowledge of the soil and its adaptability to the vegetables to be grown thereon, and an equally intimate knowledge of the plants intended to be cultivated, together with their cultural and plant requirements; and

3rd. Rich land.

It is a waste of time to attempt the utterly impossible feat of raising profitable crops of tender, succulent vegetables on any but the very richest of land. No matter how fertile the land may seem to be, good truck crops can only be grown thereon by high manuring. While in ordinary grain or cotton or tobacco farming one can by a judicious rotation and by the free use of leguminous crops, get along without the purchase of nitrogenous fertilizers, the market gardener must be lavish with his fertilizers, both nitrogenous, phosphatic and potassic. Nitrogen

forces early growth and gives large succulent leaves and stems, potash gives solidity and crispness, and increases the sugar and starchy parts of seeds, phosphoric acid tends more especially to develop the seeds of plants, hence the chief ingredient in a good fertilizer for vegetables of which the leaves or stems are the edible portion, is nitrogen.

For root vegetables, phosphoric acid and potash are fully as important as nitrogen. For vegetables of which the seed is the edible portion, like the garden pea, for instance, phosphoric acid is the leading element. For vegetables like the tomato, potato, egg plant, celery, melons, etc., potash is the most important.

Nitrate of soda is the best form of nitrogen, and the sulphate is the best available form of potash for garden vegetables of all kinds; cotton seed meal, as a source of nitrogen and the muriate as a source of potash, being next; kainit is altogether out of place in the garden or truck farm. Potash salts are just the thing for truck farming. The cheaper muriate of potash gives equally as good results on cabbages and beets as the more expensive sulphate, but the latter appears to be superior to the muriate in increasing the yield of tomatoes, spinach, lettuce and onions. For vegetables the controlling elements are potash and nitrogen, and very few of the brands of mixed fertilizers have as high a percentage of potash as most truck crops require. It is known on all sides that potatoes are dear lovers of potash, but it does not appear to be so generally known that the cabbage crop is also a potash eater; turnips come next, and cauliflower third, in their demand for potash, hence if a heavy yield of either is desired, they must be planted on soil that already has plenty of potash in it, or plenty of it must be applied.

No soil is naturally so strong that many good crops of vegetables can be raised in succession thereon, except potash be added just as often and just as liberally as nitrogen.

We have this much to say about potash for the reason that to our certain knowledge many market gardeners limit themselves exclusively to manure obtained from city stables, and stable manure, let it be ever so good, is not a properly balanced fertilizer for vegetables, and cannot bring best results. A good general fertilizer for all garden vegetables would be:

- Acid phosphate.....150 to 225 lbs.
- Sulphate of potash...250 to 375 lbs.
- Nitrate of soda.....150 to 225 lbs.

Mix the phosphate and potash and apply previous

to planting; apply the nitrate beside and around the plants after crop is up.

If the ground is well supplied with humus above amounts may be doubled or trebled with manifest advantage. In all cases, we most decidedly prefer to apply broadcast, and by thorough preparation, thoroughly incorporate the fertilizer with the soil. This done when drouth sets in wherever the application was heaviest there the crop will be the greenest, let the crop be what it may.

As muriate of potash and cotton seed meal are preferred by some, we subjoin the following mixture:

- Acid phosphate.....300 lbs.
- Nitrate of soda.....300 lbs.
- Cotton seed meal.....750 lbs.
- Muriate of potash.....250 lbs.

Mix for one ton and apply from 1,000 to 2,000 pounds per acre.

For potatoes, leave out 150 pounds nitrate of soda, and add 150 pounds more of the muriate.

G. H. TURNER.

Keeping Cabbage for Winter Use.

I have about 3,000 cabbage just heading, and I write for advice about protectieg them. Should they be taken up and trenched before thoroughly headed? How long can I leave them in the field now? When taken up would they keep in a barn? Advise how to arrange them.

M. NELSON.

Halifax Co., Va.

Let the cabbage stand until they are headed, if the frost will keep off long enough. In your section they will keep over the winter unless it be a very severe one, if they are then heeled over with the heads to the north and a furrow be then plowed on to the stalks up to the heads. In case the winter should prove a hard one it may be well to store part of the crop in a pie or heap made as follows: Pull up the cabbages by the roots and selecting a piece of high, dry ground, place the cabbages with the heads on the ground and stalks up in a row, say four feet wide. Make this first layer as long as you think will be required to pie the whole. Then place a second row of heads between the stalks of the first row, and continue this by adding further rows until the pie is brought up to a conical shape, say three or four feet high. Then cover the whole pie with straw a few inches thick and finish off with a layer of corn stalks laid so as to throw the water off.—ED.

When corresponding with advertisers, kindly mention the SOUTHERN PLANTER.

Live Stock and Dairy.

THE BUTTER SUPPLY OF SOUTHERN MARKETS.

In this issue will be found an article by Prof. Soule, of the Virginia Experiment Station, on Farm Butter Making, to which we invite attention. There is a great opening for good home-made butter in the South, but it must be good. The supply for all the high class trade in all the Southern cities comes at present from the New York and Elgin dairies, which ship thousands of pounds of butter every week into the South. In this city alone the sale of these New York and Elgin butters amounts to hundreds of pounds of butter every week. A few years ago we made an investigation into this matter on behalf of the Department of Agriculture, and were surprised to find how completely the Northern and Elgin dairies had control of the best trade of the city, and practically of very much of the second class trade. There is a small supply coming from the Western and Southwestern parts of the State and from West Virginia, but this does not begin to compete with the Northern supply. Of nearly made butter there is practically none on the market. Some few farmers bring a small supply in every week to private customers, but even this is a very small item. There is no reason whatever why the large demand for butter in the South (and Southern people are great butter eaters), should not be met by Southern farmers and thus thousands of dollars be kept at home. The only thing standing in the way is the fact that practically at present no good butter is made in the South. What is made is also not put on the market in an attractive form. If farmers will take note of Prof. Soule's advice these defects can soon be altered, and that with great profit to farmers.

IMPORTED HOGS FOR VIRGINIA.

In our last issue we published a communication from Mr. Westmoreland Davis, of Morven Park, Leesburg, in which he announced an importation of White Yorkshire hogs. He now writes us that he has made a second importation, which is thus referred to in the Live Stock Journal of England:

"Three of the best large white sows from Mr. Arthur Hiscock's sale at Motcombe, including the grand pair of gilts that won first prize as a pair at the Devon County Show, were shipped to-day (Friday) on the SS. Ulsterman at Liverpool. They go to Mr. Westmoreland Davis, in Virginia, who is establishing a herd there. Some choice specimens from Mr.

Sanders Spencer's herd were also forwarded some weeks ago."

FARM BUTTER MAKING.

Editor Southern Planter:

One who has had an opportunity to travel over the rural districts must certainly have been impressed by the fact that only a very few persons understand how to make good butter. Even in the best agricultural communities where farm papers and magazines can be found on the library table, where the land owners live in comparative luxury, the butter is one of the least satisfactory condiments found on the table. It is hardly an exaggeration to say that in twenty-five consecutive farm homes which might be visited, twenty-five different kinds of butter would be found, varying marvellously in color, quality and flavor. In some cases the butter will consist largely of a sour, cheesy curd, which has been incorporated with the fat globules through improper churning. In other cases, it will be positively rancid, while possibly in only four or five instances out of the twenty-five will it be at all palatable. There are those who may think this is stating the case extremely, but such at least are the facts gathered as the result of some years' of experience in Farmers' institute work which has brought the writer in contact with hundreds of farm homes. Strange to say, in practically all instances, the people believe their butter to be good and wholesome. In other words, they do not appreciate what good butter is, nor do they have any ideals in regard to its manufacture and production.

Of course the great success of the American dairy is due largely to the development of our factory and creamery system. Were it not for this, it is doubtful if we would ever have made much progress along dairy lines, though there is certainly every opportunity for persons who thoroughly acquaint themselves with the proper methods of making and handling butter. On the score of education and lack of facilities for the work, no excuse is available for the inferior quality of butter made on the average farm. There are hundreds of dairy schools turning out a corps of graduates each year, which one would suppose would disseminate information very largely through the communities to which they return. Prejudice, however, seems to be stronger than education, and remarkable as it may seem, it very often happens that the people of the community consider

their own butter of superior quality to that made by the educated and trained dairy school butter maker. Let this be as it may, it still does not solve the problem, nor does it explain why our farmers persist in making an inferior quality of butter from cows well bred and cared for, kept in excellent stables, and fed and nourished on clean, excellent food. It also seems very strange that when there is a splendid market for butter of high quality, that the majority of farmers should say there is no money in butter making, and that they do not find dairying a profitable industry. This does not apply to the great majority of dairy farmers, but there are still thousands and thousands of men who keep a few cows, and who should make at least fifty dollars per cow, net profit on butter, judging from the market prices prevailing at the towns near which they reside. Here is one of the leaks on the farm that could be stopped. The average cow is not credited with what she does, because the owner fails to handle her product in the best manner, and so does not obtain a fair remuneration for it. Under such conditions the dairy cows ought to combine and form a trust for their own protection. They have been a long suffering and much maligned class of animals in some communities, where the fault has not been theirs.

Admitting these facts, it now seems proper to inquire if good butter can be made on the average farm at a profit? It certainly can be if modern methods are followed. It will take but little more care and effort to make a first class quality of butter where now a very indifferent article is produced. What sense or use is there in spending days of labor and effort in feeding and caring for dairy cows, in handling and skimming milk, and in churning to make a pound of butter worth ten cents, when it might just as well bring twenty-five or even thirty cents? Yet the writer knows of dozens of instances where this thing is done over and over again, and followed up year in and year out. On visiting country towns and inquiring for good butter, it is, as a rule, twenty-five or thirty cents a pounds; in making inquiries at the farmers' homes, it is, as a rule, reported to be worth ten or fifteen cents per pound. Yet there is hardly a community throughout the South in particular, which the writer has visited during recent years, where the dealers have not said that they were unable to obtain a sufficient amount of satisfactory butter to supply the home trade.

With good barns, good feed, and cows well cared for, the making of butter could become a comparatively simple process. All that is needed is to keep

the stables clean, brush the cows down well, wipe off the udders, and use thoroughly sanitary milk pails with covers and strainers in the side. Aerate the milk in a room built and maintained especially for that purpose, connected with the stable, but closed off from it, and then keep the milk cool in deep cans until the proper degree of acidity has developed in the cream. It is then a comparatively simple matter to skim off the cream and churn it in a granular form, and produce a butter sweet and rich in flavor, and with excellent keeping qualities. It is hardly worth while to ask the question as to whether good butter can be made on the farm or not. The answer is certainly yes, and it will require but comparatively little more effort and skill than is required now to make an inferior quality.

The chief trouble in the manufacture of farm butter is the fact that the milk is produced in stables that are unsanitary. It will take comparatively little effort to clean the stables every day, whitewash them once or twice a year, spray them with a little disinfectant occasionally, and brush off the cows so as to keep them free from manure and filth. Then, if the milkers have clean hands, and the milk is quickly drawn and conveyed to the aerating room, and either separated or placed in deep cans, it will be in good condition. In sections where the weather is cold enough, ice should be stored for the summer; in other sections, artificial ice can be purchased for a reasonable cost, while springs can often be utilized economically and to the best advantage. After the milk is drawn, it is essential that it be handled skilfully. One great trouble on the average farm is the fact that it is kept in the cellar, which is closed up so as to prevent the circulation of air and light, and it thus becomes musty and close. Milk or cream kept here will generally have a close, musty, and often a cheesy flavor. It is impossible to make good butter under such conditions. This difficulty could be obviated simply by using a deep setting tank for the milk or cream, as the case may be, and thoroughly scrubbing and disinfecting the cellar occasionally, and opening it up at night so as to let the air circulate through it.

Another frequent cause of trouble to the housewife who attempts to make butter, is the fact that she persists in using old rags and cloths and utensils which are not properly cleansed and sterilized. Brushes should replace the old rags to commence with, and if a larger amount of hot water were used, which can be obtained quite simply in almost any house through the use of a water back on the range, there would be

less difficulty with various undesirable fermentations and putrefactions which develop in the cream and butter, causing the housewife no end of trouble and worry. Cleanliness is one of the things about the dairy that is very often not fully appreciated. This is due in part to the insidious nature of germ growths, whose pernicious qualities are not fully appreciated. Good brushes, plenty of sal soda, a little sapolio, more hot water and elbow grease, and the chief troubles of the farm butter maker will disappear as if by magic. Thus there is no reason why, with the exercise of a little more care and discretion, a first class quality of butter should not be made on the average farm.

How this good butter can be made has been indicated to a certain extent, though in many places the equipment used is out of date and unsatisfactory. Separators cost so little now, that where a few cows are kept, as they should be on every farm, one should be purchased and used. It need not cost over \$75 for a small herd, and it is easy to handle and cleanse, and light to run. The machine gives a perfect separation of the milk, and thus saves more than its cost in a year. After being run through the separator the milk is in the very best condition for utilization on the farm in the feeding of calves, pigs and poultry. The cream is reduced to a small bulk, has been aerated and cleansed by passing through the separator, and is in the best condition to ripen. After it has been ripened the churning is an important matter. The churn and butter worker should first be thoroughly scalded and then rinsed out with cold water. After the cream is placed in the churn, the color should be added if it is necessary. The churning should proceed slowly and uniformly from twenty to thirty minutes, when the butter should have broken in a granular form, and possessing a rich, aromatic and slightly acid flavor. Immediately after it breaks, some cold water should be added to chill it, then it should be taken out and placed on the worker and allowed to drain. The washing with water removes the particles of curd. If the butter were churned beyond the granular form, a certain amount of milk would be incorporated, which would greatly hasten decomposition and cause the butter to go off flavor and become rancid. After the butter is carefully worked so as to thoroughly distribute the salt and prevent mottled butter, it should be made up in nice, uniform packages, wrapped in parchment paper and stored in the coolest place available, so as to keep it firm. Then when taken to market it should be placed in a basket or box remarkable for its clean and attractive appearance, and for the ab-

sence of the usual supply of rags and old newspapers, which so frequently accompany butter.

Under these conditions, butter of the sweetest and best quality can be made at a good profit, where it is now so often manufactured at a loss, providing a new source of revenue to the farmer without the expenditure of a large amount of capital or labor. All that is needed is a little better appreciation of the nature of germs and how to combat them, a little more care in the handling and churning of the cream, and in the packing and marketing of the butter. All the necessary effort and labor is now being performed in making butter, bringing ten to fifteen cents a pound. Can you afford to keep cows and handle them on this basis? Is that other ten or fifteen cents a pound, which represents your profit, and should amount to \$75 per cow per annum, worth going after?

ANDREW M. SOULE.

Virginia Experiment Station.

DUROC JERSEY HOGS.

Editor Southern Planter:

I notice one of your correspondents asks the characteristics of the Duroc hog. I have kept Poland-Chinas, Berkshires and Durocs. As you say, the Berkshire is hard to beat. But still I think that for healthiness, docility and general utility the Duroc is the coming hog. With other breeds I have always had some crushed pigs occasionally, but the Duroc is such a quiet, motherly sow that I have had no such trouble with them. The boars are easily handled, and though active in breeding show little inclination to roam. They seem to stand a changeable climate well, and fatten easily, and I think those who have had trouble with sows crushing or eating their young, or with nervous, fretful sows, will do well to try this breed. They are in color an attractive cherry, and the little pigs are beautifully even in size and color.

Orange Co., Va.

A. F. L.

THE BOWMONT FARM'S HERD OF JERSEYS.

The Jersey Bulletin thus speaks of this herd, which will be found advertised in this issue:

"The Bowmont Farm's Herd of Jerseys at Salem, Va., has reached the place where it can be called one of the very best in America. Indeed, it reached that place some time ago, and the results of Mr. Bowman's fine judgment in the work of building it up are apparent in the young stock coming on. Wherever they go they are giving satisfaction, and the owner feels well repaid for the outlay in foundation stock. Certainly the herd was built after a system that warranted the highest results."



FIRST PRIZE SHROPSHIRE BUCKS

at the English Royal Show, June, 1904. The five finest sheep shown in that year.

AMONG THE FLOCKS OF SCOTLAND.

Editor Southern Planter:

From my earliest boyhood I loved to hear stories about the faithful Scotch shepherds and those wonderful dogs before whose intelligence we must all bow in admiration. Bonnie Scotland was the one land I most desired to visit. You don't wonder, therefore, that my heart gave a bound when I first looked on its green fields just beyond the beautiful waters of the Tweed at Berwick. It was a glorious evening. I sped along in the slowly deepening twilight toward that choicest of all cities, Edinburgh, so well named, "the pride of Scotland." It might not be uninteresting to stop in my sheep stories to describe the scenes about Edinburgh, or to revive its historic and chivalric memories, but lack of space forbids.

With my face set towards the Grampian Hills, made famous in story by Scott's *Lady of the Lake* and *Rob Roy*, as well as by the gallant deeds of Robert Bruce and William Wallace, I was off for a tour through the country of the Highland cattle and the Black-faced Highland sheep. At Aberfoyle I left the train to take the country on foot and-by

coach. As I walked over to the inn for breakfast, I saw a flock of very queer little sheep crowding forward over Rob Roy's bridge, which was only a few steps from the inn. These little sheep all had horns, black-and-white faces, long fleeces almost sweeping the ground. They all looked so much alike and seemed so strange that I noticed them closely. When I saw their faces at close range, I remembered a much prized picture that hangs in the hall at Edgewood, a picture that was given me as a boy at school, because I did not miss a day and was not tardy during a whole session in our little country school. The picture was indeed a prize to a boy who loved sheep and collie dogs. It was a cheap chromo, but to my boyish fancy it was the most beautiful picture ever painted. It showed two ewes and lambs out among the rocks and heather and two Collie dogs lying near with their faithful eyes resting fondly on their charges. It was entitled, "On Guard." I always thought those were queer looking sheep. I now know that they were Blackfaced Highland ewes. A black Collie was handling this bunch of Highland sheep with remarkable skill. The shepherd had gone on to get his drink of ale and had left his "faithful

tyke" to work this flock of sheep through the little village. I was soon among the heather on these Scottish hills, and found these sheep scattered everywhere. You could not go a hundred yards without running upon a small bunch of these little sheep. They do not run in flocks at all. Often two sheep will be found off to themselves. Occasionally a ewe has no other company than her lamb. They are thus more like goats than sheep in their habits. I soon noticed that some of the sheep were sheared and some not. A little closer observation showed that every ewe that had a lamb had her fleece. It occurred to me that these ewes would lamb out on these bleak hills and even up to July the nights are very cool. These great fleeces would screen the little lambs from the chilling winds. I should say that no hardier breed of sheep lives than these Blackfaces. They never know shelter, except such as the protected side of the hills could afford. How they pass through the heavy snows of the winter is a wonder to me. Were it not for Collie dogs I do not see how these sheep could be managed at all, as they roam at will among the hills. I found them on the very top of Ben Venue, a lofty mountain. Every shepherd you meet has a Collie walking at his heels, and this Collie is a very knowing companion. He understands every word and gesture of his master, and the shepherd talks to him as he would to his closest friend. He feels, at least, that his dog understands, so the companionship is just as close as if he did. A gentleman told me an interesting incident about his Scotch shepherd. One day he was standing by a hedge, when his shepherd approached from the opposite side with his dog at his heels. He was talking aloud finding fault with some of the sheep, a thing he would have considered most disloyal to his master, if he had thought any one was hearing him. He suddenly stopped, and, turning to his dog, exclaimed: "Shame on yir! Go on! Ain't I bin telling yir ye are allus busy listenin'?" Fine testimony to his faithful service. He would not share the secrets of his business with his best friend, his faithful dog.

The Blackfaces have coarse hairy fleeces not exceeding four pounds, and they are too small to make a general purpose sheep, but the flavor of their meat is unexcelled save by that of the Welsh mountain sheep. Blackface mutton is the choicest dish in all that country, and I can testify that it is hard to beat. It brings a special price on the market.

I was also much interested in the Highland cattle. These were just as rough and woolly as I had pictured them. They seemed to roam over these hills

as wild cattle, and are too much like the American bison to please me. The bulls have enormous horns, sometimes expanding four feet and the hair on the crest often reaches down to the nostrils. I am inclined to think that it will take much improvement to make a great breed of them. They are not the only Scotch cattle that can furnish Buffalo robes. The Galloways are natives of Scotland.

A week later I was in Melrose in that lovely valley beside the gentle Tweed, under the shadows of the Hills of Eildon, which overlook the home of Walter Scott. I was off on my bicycle to see the flocks of that charming bit of Scotland. Every flock I saw during my day's journey was a flock of Cheviots.

This country, you remember, lies at the foot of the Cheviot hills, which have been the home of this handsome breed for over a century. How beautiful these Cheviots were! Their snow-white faces, their bright eyes, their long fleeces, their strong shoulders, their proud carriage make them at once the most attractive of all sheep to look at. They have little wool on the legs and none on the heads. They are bald-headed. They seem to be as kind in disposition as the jolly-bald-headed man. About Melrose these sheep are handled in small flocks much as we handle sheep in this country. In order to see the Cheviots in their native haunts, I went right into the heart of the Cheviot Hills. From New Castleton, the home of Walter Scott's hero, Dandie Dinmont, I strolled across the country admiring the picturesque country, which is so different from anything I had expected. These Cheviot Hills are not rugged and rough and covered with Scotch heather, but they are carpeted with the most luxuriant grass, and are absolutely treeless. When I had climbed to the top of Home Hill I could look across the rolling hills lying under the purple haze of the distance and see a country given up almost entirely to the raising of Cheviots. It is an ideal sheep country, with the exception of the moors that are found on the flat tops of these hills, which become in wet seasons the breeding places of the liver fluke, foot-rot and many other diseases. I came to an old shepherd's home on the far side of Home Hill close by a tiny little burn, whose rippling waters so clearly reflected the green of the hills that it has been called Green Burn. I was given a Scotch welcome, which means more than I can tell. As I ate the scones and cheese and drank the fresh milk that was set before me the old shepherd told of his sheep and dogs in language that was too much for me. He told me that he had charge of three thousand sheep on those hills, that he kept them in small flocks,

that he had them sleep in a fresh place every night, that he had no shelter for them in winter, that he gave them only roots in winter, leaving them to get their roughness from the heather and the matted grass of the hills. When I saw no fences on those hills I asked how he ever got them in small flocks and then how he kept them so. He pointed to his dog, and said she understood the parts of the range where each flock belonged, and she kept close watch of each flock. When I wanted to photograph a flock of Cheviots he waved Meg off to a flock a half mile distant, and she had the sheep herded on the side of the hill where he had pointed in a few minutes.

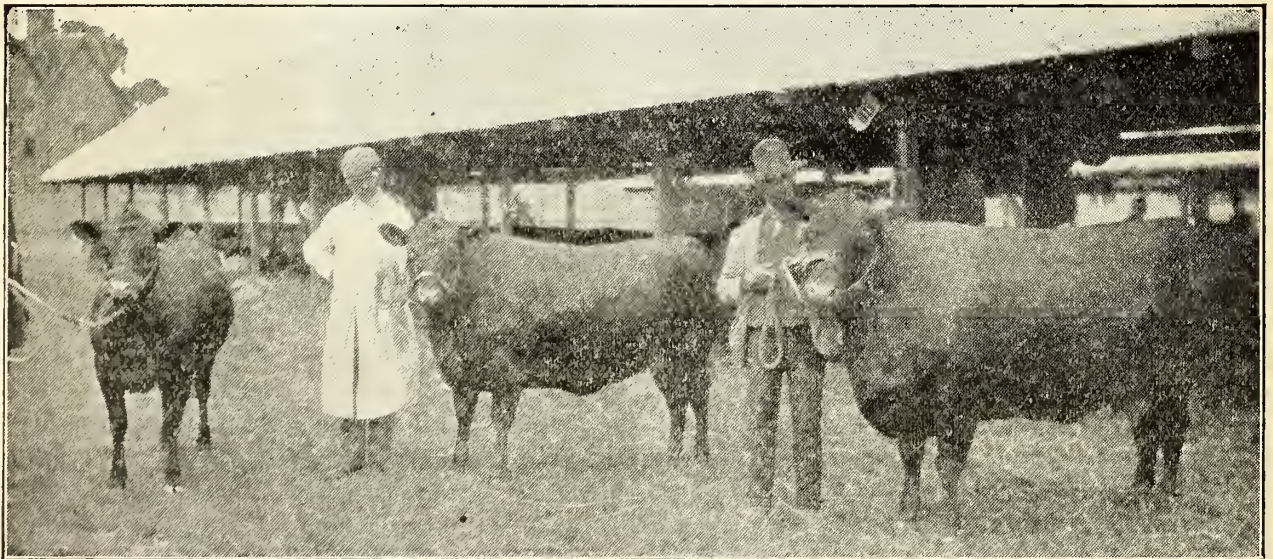
Here was a flock of native Cheviots in their own environment. They were rather small and coarse in fleece, but they looked hardy and strong. The lambs were very small for June, but I was told that it was found best to lamb the ewes in April and May, as the loss of lambs was very great in the early months. It was interesting to see so many sheep pastured on these hills, and to remember that they had been pastured

here for years. I at once thought of diseases. I found that they are beginning to have their troubles. This old shepherd had never heard of stomach worms, but he described cases that were alarmingly familiar to me. Liver fluke and louping ill were increasing year by year. Only their painstaking management saves them from serious trouble.

When I left the shepherd's cottage, the old man insisted upon going with me part of the way. When we got in sight of the village, he parted company with me, and as I handed him a shilling for the "old wumman," he shook his head and rebuked me with words that still ring in my ears: "It dus oor herts gude to feed and hoose a stranger." These Scotch people are a noble people, honest, kind-hearted, and faithful to every trust. They have written their names high on the scroll of worldly fame. It is a pleasure to meet them face to face and to reflect upon the sturdy elements of character that have made them a great people.

H. B. ARBUCKLE.

Maxwellton, W. Va.



BLOOD WILL TELL.

Editor Southern Planter:

While at the Royal this summer I made a point to study the effect of breeding as evidenced by this wonderful show. I studied my catalogue carefully and asked many questions of the breeders. I found that half the prize winners in one breed of sheep owed their quality to one ram. I found that in both the Shorthorn and Hereford classes that there were two or three outstanding sires. In one case among the Herefords I was looking at a champion bull, and glancing at the catalogue I found he had a full sister

in the show. I went to her stall and found the red ribbon tied to her head also.

This fact was especially noticeable in the Red Poll breed, the dual purpose breed that is becoming more and more popular in our country. Three bulls were the sires of practically all the winners in that large show of the breed. The two greatest bulls that have ever been known in the breed are possibly Rufus and Majiolini. I am almost willing to believe that these two bulls have done most for the making of the breed. Both were great show bulls. Majiolini was a Royal winner over and over again. I think he holds an

unbroken record. This old bull still lives, and it gave me pleasure to see him at his new home. The thing that caught my attention was that the champion cow and the champion animal of the breed at the Royal this year was sired by Majiolini. He was the sire of two other females, and both were prize winners. The three were pronounced by some the three prettiest females in the show. It gives me pleasure to present their photograph, though it does not do them justice. You can see they are as like as three peas. What a testimony to the value of blood in breeding. Blood will tell. H. B. ARBUCKLE.

Maxwelton, W. Va.

BUYING CONCENTRATES FOR DAIRY COWS.

At this season of the year the question of buying feed for the winter is always an important one. Three things to be taken into consideration are—first, cost; second, total digestible matter; third, general effect upon the animal. In some cases a fourth point should be considered—viz., the amount of digestible protein.

If all feeds were of equal feeding value the farmer would naturally buy the one which could be obtained at the lowest price per ton. But since some contain a much larger amount of indigestible matter than others, and since this is practically useless to the animal, a more rational basis of price or valuation would be upon the total digestible matter contained. This is, however, impossible to determine by external appearance or even by a simple chemical analysis. Fortunately most of the common feeds have been studied sufficiently to enable us to know approximately the amount of digestible matter which they contain. The following table shows the cost of one pound of digestible matter in the different feed stuffs mentioned, if bought at the prices indicated, which are the prevailing prices at the present time in central Pennsylvania:

COST OF ONE POUND OF DIGESTIBLE MATTER IN SOME COMMON FEED STUFFS AT THE PRICES GIVEN.

Feed.	Price per Ton	Cost of Digestible matter per pound.
Wheat bran.....	\$23.00	2.00 cents.
*Corn (shelled)	21.43	1.31 cents.
Corn and cob meal.....	19.14	1.35 cents.
Gluten Feed	22.60	1.45 cents.
Cottonseed meal	25.75	1.59 cents.
Linseed meal old process.	27.50	1.77 cents.
Malt sprouts	19.00	1.61 cents.
Dried distillers' grains..	25.00	1.45 cents.

* 60c. per bushel.

| 60c. per bushel for corn on the ear plus 7c. for grinding.

It will be seen from this table that the cost of one pound of digestible matter varies greatly in these dif-

ferent materials at the present market prices. The farmer should buy those feeds in which he can get the largest amount of digestible matter for his money. At the present price wheat bran is about our most expensive feed. It is believed that the feeding value of wheat bran has been somewhat overestimated in many cases, and that the present market price is unwarranted by its feeding value. It is seen that linseed meal is also a comparatively expensive food. It should be the aim of the feeder to substitute some of the cheaper products for the expensive ones whenever practicable. As the table shows, the different corn products, that is, gluten feed, dried distillers grains, shelled corn, and corn-and-cob meal, are about the least expensive at present prices.

Corn will probably remain the basis of most rations, as it should, but when it is fed with corn silage and timothy hay or corn stover it usually becomes necessary to buy some feed rich in protein. Cottonseed meal is the richest of our common feeds in this respect. Bran is often bought for this purpose, but as a matter of fact its percentage of digestible protein is not very high, while the large amount of indigestible matter which it contains, as already noted, renders it a costly feed. Gluten feed and dried distillers grains, such as "Biles XXXX," and "Ajax Flakes," contain much more digestible protein than wheat bran and cost much less per pound of digestible matter. The valuation of a feed stuff based upon protein alone would be altogether misleading. It is much safer to base the valuation upon the total amount of digestible matter and then choose among the cheaper, some one rich in protein.

If clover or alfalfa hay (or cow pea or soy bean hay.—Ed.) is fed the protein supply becomes less important. The amount of protein required for a dairy cow is not accurately known at present. She certainly should have enough to maintain her body and produce the protein of the milk.

The effect of the different feeds upon the health of the animal must, of course, be taken into consideration. In this respect there is nothing superior to wheat bran and linseed meal, but they are among our most costly feeds. Cottonseed meal, especially when fed heavily, may cause trouble if fed continuously for a long period. When fed with corn or other wholesome food there is no danger in feeding two or three pounds per day, and much larger amounts than these are fed by many persons, especially in the South. There is more danger in feeding cottonseed meal to hogs than to any other class of animals. In feeding dairy cows it might be well to take into consideration the fact that cottonseed meal produces a hard butter fat, whereas linseed meal and gluten feed produce a soft butter fat. During the summer months this would be of more importance than during the winter.

THOS. I. MAIRS.

Pennsylvania Experiment Station.

The Poultry Yard.

ARE YOUR POULTRY HOUSES WARM AND FREE FROM DRAFTS.

This is a question to which it will pay every poultry keeper to give attention. The nights now are always cold. The days are often so, and both are likely to be colder. Hens will not lay well unless the houses are comfortably warm at night, and they are kept warm all day by plenty of exercise in scratching for their food. Drafts, above all other things, are fatal to good laying. Even if a house be cool if it is free from drafts the hens may be healthy and may lay moderately, but in a drafty house roup is sure to make its appearance, and when once this sets in laying will be over. At one of the Experiment Stations two houses built exactly alike of matched boards with shingle roof were erected. One of these was sheathed on the inside and this covered with paper. In each were placed 12 pullets, the flocks being as nearly alike as possible. The flocks were fed alike, having a morning mash of corn meal, middlings and ground oats, and at night whole grain scattered in the litter. Fresh water, grit and bone were placed where the hens could get them as they wished. The laying test of the two lots began 24th November, and was continued five months. The pullets in the warm sheathed house laid the first month 87 eggs, the second 130 eggs, the third 138 eggs, the fourth 120 eggs, the fifth 154 eggs. In the cold house the hens laid the first month 39 eggs, the second 106 eggs, the third 103 eggs, the fourth 124 eggs, the fifth 114 eggs. Totals, warm house, 629 eggs. Cold house, 496 eggs. A difference of 133 eggs. The value of this number of eggs in excess of those laid in the cold house would repay the cost of sheathing the house the first year. Make sure that you are not losing eggs by neglecting to have your houses warm and comfortable. Make the fowls keep themselves warm during the day by scratching for all the grain food they eat. Keep them dry whilst doing this.

CHICKEN CHATTER.

Never breed from a cowardly male.

Don't breed from a long-tailed bird.

The hen that will pay has a bright red comb.

The man who advertises is the man who sells his stock.

It generally takes eight weeks to grow a squab broiler.

April and May you will get the best price for broilers.

Don't breed from pullets when you desire strong chicks.

A year-old cock and a two-year old hen is an excellent mating.

Don't try to keep two breeds when you know how to raise only one.

Better kill that inferior stock than your reputation by trying to sell it.

Your laying pullets should be separated and fed to promote egg production.

Know the requirements of your market and then breed to those requirements.

If you pack fowls while still warm the skin will become very much discolored.

For the American market the yellow-skinned fowl has much the better sale.

Unless you wish to depreciate the value of your birds don't ship hens and cocks together.

A dressed bird should never have dark pin feathers in it, as it gives a dirty and unattractive appearance to it.

Patience first, then watchfulness, care and hard work is what makes the poultry industry a profitable investment.

Broilers that are out in the early part of December should be ready for market by the first part of February.

Have your poultry ready when the demand for it is greatest; it is "Jolnnie on the Spot" who succeeds in this work.

It is claimed that equal parts of red pepper, alum, rosin and sulphur will cure chicken cholera. Feed a tablespoonful of this mixture in three pints of scalded meal every day.

ANIMAL FOOD FOR LATE MOLTING FOWLS.

Fowls that have not finished molting require animal food. It is essential to a rapid molt at any season, and tends to sustain the health and vitality of the fowls and to increase the gloss and attractiveness of the new feathers. It can be fed in the form of prepared beef scraps kept constantly before the fowls, fresh green bone fed liberally three times per week, or waste meat (raw or boiled); parts of animals can also be boiled for three or four hours and the liquor or "beef tea" mixed daily in the regular mashes. Skim-milk is another valuable animal food that is exceedingly beneficial. It can be fed sweet or thick, sour and mixed with the mashes. The thick, sour skim-milk will form a very palatable mash, and is more readily digested. The growth of feathers demands protein or albumen, which is one of the main constituents of animal foods. Vegetable foods are also valuable. Feed grain sparingly.—*Reliable*

The Horse.

THE COLT.

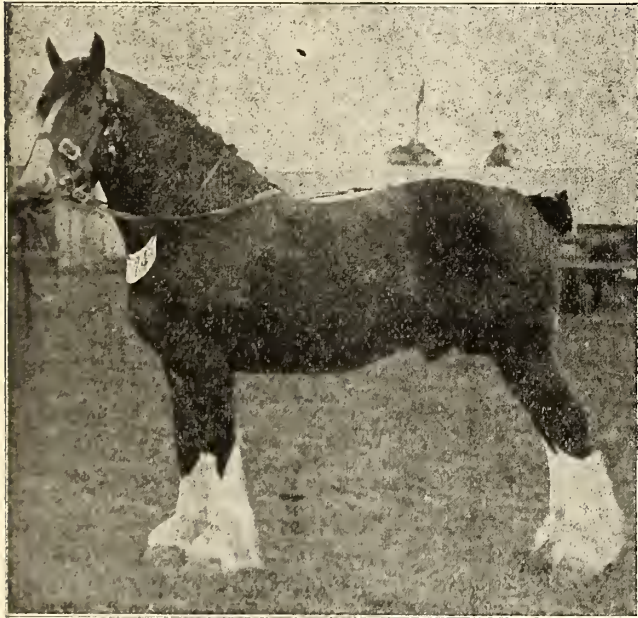
Nothing has more strongly impressed us in the years we have spent in the South than the want of care and attention which Southern farmers show for the young animals of their stock. It matters not whether the stock be horses, cows, sheep or hogs, the same want of thought for them is seen. So long as they can obtain their sustenance from the dam they usually make good progress, but the effort always seem to be to get them off the dams as soon as possible and to appropriate for themselves the work to be had from the stock, and the young ones are then largely left to shift for themselves on such food as can be found handily, whether adapted to their wants or not. This is bad policy, and will never pay with any kind of stock. Young animals have special wants, which must be provided for or they cannot make that growth which is essential to their future profitableness and welfare. If the dam does her duty to her offspring it will at the time when able to begin eating be fat. If once this "sucking fat" is lost by want of proper food, care and attention, it is never put back again, except at a cost out of all proportion to its worth, and rarely ever at any cost. It may be taken as a sound axiom that the future value of any animal for any purpose is determined by the care given it during the first year of its life. What it does during that year will make or mar its future. Especially is this true of the colt. If from the time when it can eat it is not fed with food which will supply the protein needed for the making of bone and muscle it matters not what other food is fed the colt will be a failure sooner or later. This is true also of all other animals. In the first year of life the bones and muscles are being formed, and these cannot be built up out of carbo-hydrate foods alone; they must have protein foods. To expect corn alone in the shape of grain and fodder to supply this need is to expect the impossible. Where this feed alone is fed the animal in the effort to secure the needed protein stuffs itself with the food, and only succeeds in making a "pot-bellied" animal, with weak bones and muscles. Such an animal can never afterwards compete successfully in the market or on the road with one properly fed at the start. We in the South have an abundance of feeds rich in protein, and therefore there is no excuse for not meeting the requirements of nature. Oats, peas, soy beans, beans, clover, alfalfa, cow pea hay, vetches,

and soy bean hay all are rich in protein. Any of these fed in conjunction with corn and corn fodder and the grass hays will make a ration for young animals on which they can build up their frames and muscles and keep on their bones the "sucking fat" with which their dams clothed them. They should be encouraged to eat these foods as soon as they are able to do so, and a choice of them should always be provided to keep their appetites sharp and their health good. For young colts nothing is better than good, sound oats, bran and clover hay. They should have access to these foods in an enclosure apart from the mares, and will soon learn to go and help themselves, and at the same time learn to be contented and happy when the mares are away from them working. This is a very important matter. When not early taught the colts fret themselves when the mares are out of their sight, and lose flesh and become soured in temper. To avoid this many farmers allow the colts to run after the mares all day long when they are working. This is a bad practice, as it simply uses up the feed which should go to the development of the colt in maintaining its acquired growth and strength. Teach them early to be contented in the stable, barn or pasture in the absence of the mare, and then when weaned they will, if properly supplied with food, suffer no deterioration. All young animals should be handled from birth and taught to look upon their owners and those having the care of them as friends, in whom they can place perfect confidence. Especially is this important with colts. Halter them soon after they are born and teach them to be led. This done, the breaking them to harness and work will be an easy task. They will not be afraid of either the harness or the cart. Above all things, be kind to a young animal; teach him to love and not fear you, and then his temper in after life will be an asset of great value in the market.

NOTES.

Kelly, 2:27, son of Electioneer, 125, and the great brood mare Esther, thoroughbred daughter of Express, has been so well patronized that my lease on the bay stallion has been renewed with his owner, James Cox, of Mt. Jackson, Va., and he will be again kept for service at my private stable, 1102 Hull street, Mauchester, Va., during 1905. Ninety-two mares were booked, and over 80 of them have already been served this season. Among these were a number of matrons of real class, of which some were shipped from quite a distance. On the score of breeding,

Kelly stands very high. He was sired by Electioneer, who got 166 in the list, among the world's champions, Arion, 2:07 $\frac{3}{4}$, sold for \$125,000 at two years old; Sunol, 2:08 $\frac{1}{4}$, and Palo Alto, 2:08 $\frac{3}{4}$, while in addition his sons and daughters have bred on with marvellous results. Esther, though strictly thoroughbred, nicked well with trotting blood, and besides Kelly, she produced the famous Expressive, 3, 2:12 $\frac{1}{2}$; Express, 2:21, and Elwina, 2, 2:27 $\frac{1}{2}$, while her daughters Extra and Effie are also great brood mares. A horse of exquisite quality and finish, Kelly represents the highest type of a trotter, while in temper and disposition no horse ever excelled him.



THE CHAMPION SHIRE HORSE OF ENGLAND IN 1904—
"SCHOULDEN SCYLOX."

He weighs 1,900 pounds at 2 years and 8 months old.

There is not a better mannered four-year-old trotter in the Valley of Virginia, and with good behavior he shows speed, too, than the big brown gelding Barlight, owned by James Cox at Belgravia Farm, by whom he was purchased as a yearling from his breeder, L. Triplett, Jr., the well known lawyer of Mt. Jackson. Barlight now stands 16.1 in height, and at maturity will weigh probably right around 1,300 pounds. He was sired by Kelly, 2:27, dam Fannie, a gray daughter of Sam Purdy, 2:20 $\frac{1}{2}$, second dam Mousie, dam of Hazel Bashaw, 21463, pacing record 2:31, by Traveller. Hazel Bashaw, son of Bashaw, Jr., 2:24 $\frac{3}{4}$, formerly owned by Dr. D. D. Carter, Woodstock, Va., is credited with two standard performers in Belle Truit, 2:24 $\frac{1}{4}$, and the gray pacing gelding Doctor H., 2:22 $\frac{1}{4}$. The size of Barlight doubtless comes as an inheritance from his sire's side, and the brown gelding is a credit to Kelly. The lat-

ter has a full sister in the famous Expressive, 3, 2:12 $\frac{1}{2}$, who stands 16.2 and weighs about 1,300 pounds, while their dam, Esther, the thoroughbred daughter of Express, was full 16 hands. Another instance of transmission of great size, and a notable one, is that of Whips, 2:27, son of Electioneer and thoroughbred Lizzie Whips, who got the giant trotter Azate, 2:04 $\frac{3}{4}$.



The good gray mare Grandma, thoroughbred daughter of imp. Woodlands and Pomona, by Ten Broeck, owned here by E. S. Engleking, was bred in 1904 to Aloha, and the prospective produce will be entered in the Futurity and other important stakes. Grandma's foal of 1904, a bay filly by Aloha, died when four days old. The daughter of Woodlands raced well for her present owner, and for him she was a good winner at the fairs in Virginia, North Carolina and South Carolina. Pomona, the dam of Grandma, also produced the speedy gelding Handpress, who, at nine years old, in 1904, won at five-eighths of a mile in California, and did the distance in 59 $\frac{1}{4}$.



William Garth, who trains for J. E. Lane, of Esmont, Va., has probably the best stable of steeplechasers sent out from Virginia this season, and winners have been furnished in Imperialist, Mr. Churchill, Charley Moore, and others. In addition to his jumpers, however, Mr. Lane has some eight or ten choicely bred and promising yearlings that are being handled by T. B. Doswell at Bullfield Farm, and these will be raced next season. At Woodmond and Hattondale Farm, where Burlington, "the gentleman in black," holds court, there are some choicely bred mares, and their produce by the handsome son of Powhatan and imp. Invercauld will be showing up as winners before very long. Burlington was a fine race horse, and won the Criterion Stakes, Pelham Handicap, Brooklyn Derby, Belmont, the Trial and Tidal Stakes, and other important events.



Virginia horses did well in the jumping and hunter classes at the New York Horse Show last month, among those that carried off prizes being Elevator, Buck, Garnett Ripple, Colonel Hawkins, Lucy Sutherland, Up-to-Date, Chappie Lee, Tip Top and others. Elevator, the big gray gelding, by Eleve, thoroughbred son of Eolus, was sold by his owner, John Stewart Bryan, of Richmond, during the show to the wealthy New Yorker, Frederick G. Bourne, who paid \$1,500 for the horse. Elevator was bred at Laburnum Farm by Mr. Joseph Bryan and passed from him to his son, Mr. Stewart Bryan. The dam of the tall gray gelding was Kitsey, a daughter of the trotting stallion F. P. V., son of Mambrino Patchen, 58.

BROAD ROCK.

Miscellaneous.

VARIETIES OF WHEAT, CORN, ETC., GROWN IN THE STATE OF VIRGINIA.

We invite the attention of the farmers of Virginia to the following communication received by us from Prof. Soule, the Director of the Virginia Experiment Station, and ask that they will comply with the request therein contained. It will mean much to the farmers of the State to establish a reputation for the production of varieties of wheat, corn, etc, specially adapted for specific objects.—ED.

Editor Southern Planter:

Will you not be kind enough to request subscribers to the SOUTHERN PLANTER in Virginia who are engaged in the production of named varieties of wheat, corn, etc., to advise us of that fact. We are frequently requested to inform, not only Virginia farmers, but those residing in almost every section of the United States, where they can obtain certain named varieties of wheat, corn, or other cereals produced in the State. It is thus a matter of pecuniary interest to every breeder of corn and wheat to post the Station authorities on what they are doing. We believe that with the information desired at hand the Station can be made of great service to seed producers in the State.

In our work at the Tennessee Station we found two varieties of corn native to Virginia possessing qualities of unusual merit. These were Cocks's Prolific and Virginia Ensilage. The combination of soil and climate found in Virginia ensures the successful development of varieties of corn adapted for culture in the States lying to the South. Therefore the breeding of special varieties on a commercial basis will provide a profitable industry for many Virginia farmers. This is a phase of our agriculture that has been overlooked entirely. We have been purchasing too much seed wheat, corn, etc., from other States, and not raising enough of our own. We can grow varieties better adapted to our own needs than we can purchase elsewhere.

We should also like to have a list of those engaged in the production of improved strains of cereals in the State in order that we may secure small samples of these grains for testing on our experimental plats, and for analysis as well. The writer has always believed that Southern farmers could grow winter wheat to advantage, and that this wheat would be the equal of that produced in any other section of the United States. It is hardly necessary to say that investigations along this line were carried on at the Tennessee Experiment Station, and a report published as Bulletin No. 4, Vol. XVI. These results were

so strikingly in favor of Southern grown wheat that it created an unusual interest in the subject, and it would seem advisable to duplicate the experiments on a larger scale. We are, therefore particularly anxious to have the addresses of all persons interested in the growing of well established varieties of wheat, so that we may obtain samples from them for analysis and baking tests.

It is also my opinion that corn produced in the South is likely to prove richer in protein than that grown in other sections of the country. This is largely attributable to our climatic conditions. We propose, therefore to undertake an extensive investigation to establish the relative merits of Southern grown corn for the production of protein, and to determine as far as possible the influence of soil and climate on the same.

If you will publish this communication in your valuable paper, you will confer a great favor on us, and I trust that the farmers of Virginia who are already interested in this matter, and especially those who are endeavoring to establish or improve standard varieties of wheat and corn will notify us of the fact so that we may be able to secure samples for the prosecution of the work as outlined above.

Believe me to be, with best wishes,

Very respectfully,

ANDREW M. SOULE,
Dean and Director.

SUGAR FROM CORN STALKS.

Perhaps the greatest new source of wealth that for the first time has been publicly demonstrated at the St. Louis Exposition, is the discovery of Prof. F. L. Stewart, of Murrysville, Pa., that sugar of equal quality and quantity may be secured from suitable cornstalks as from the sugar cane of the South. The jurors of the exposition, recognizing the immense value of Prof. Stewart's revelation, have awarded him a gold medal, one of the highest awards possible.

The manufacture of sugar from the cornstalk is practicable in all that great territory between the sugar belt of the South and the short-season territory of the North. A company is now being incorporated and the capital is secured, to erect large factories for developing the Stewart process. One factory will be erected soon near Fort Worth, Texas, and another in Maryland, and others will, no doubt, follow in many districts in the suitable latitudes.

Prof. Stewart has discovered and fully demonstrated in the past few years that if the ear of the

maize (of suitable variety) is removed at a certain time (near the roasting-ear condition), the nature of the plant in further growth will be changed, and its sugar-making properties will be raised from say 6.70 to 13.80 per cent., as in one series of tests—i. e., 12 to 15 per cent. of sugar may be obtained from the juice of stalks so operated upon. Maize plants have long been known to contain sugar in the juice of the green stems, and many times efforts have been made to utilize it; but this has hitherto been commercially unprofitable—the juice containing too little sugar at any of its natural stages, and that obtained was associated with relatively large proportions of impurities.

On account of the great value of the other products to be secured through the Stewart process, the sugar might be considered as a by-product, or its actual cost figured as low as one cent per pound for the highest grade (96 per cent.) of unrefined sugar. Unlike unrefined beet sugar, but like that of cane sugar, the maize cane sugar has naturally a fine flavor, adapting it for common use as well as for refining. The products of the plant under the new process will be—first, the ear, suitable for food products or the silo; second, sugar products, including white crystal, yellow and second-grade sugars, table syrup, molasses and levulose, and molasses stock feed; third, the cellulose products, including paper pulps, five grades of cellulose, and viscous pyroxylin, amyloid and fine charcoal. These products of the cellulose structure of the stalk are used in the manufacture of many commodities demanded in the arts—for making celluloid, collodion, sizing, varnishes, transparent films, incandescent lamp filaments, artificial silk, gun cotton, smokeless powder, and many other purposes. The clean fiber and the cellular matter products result directly from the previous operations required to extract the sugar, so that the process is profitable at every stage.

To test thoroughly the practicability of this process, several varieties of corn have been grown in widely different localities between the 30th parallel and the southern limit of the beet sugar region, about latitude 40 degrees, and analytical and manufacturing tests have realized all the early promise of Prof. Stewart's experiments. In 1898, at Murrysville, Pa., 12.64 to 13.68 per cent. of sucrose was found in the juice of the process stalks; in 1899, process stalk and juice samples from Elkhorn Valley, Neb., yielded 12.61 to 13.6 per cent. of sucrose in the juice (16 tons of trimmed stalks to the acre); in 1900, in Ventura county, Cal., 13.1 per cent. of sucrose and 1.1 per cent. of invert sugar were found in the juice, with process-stalk tonnage of 17½ tons per acre, irrigated; in 1900, similar results were found in South Carolina, Georgia and Pennsylvania tests. Upon the

basis of 12 per cent. of sugar in the juice, the estimate was made by a noted sugar expert, Mr. Edward Wolfbauer, of New York, that the yield of sugar per ton of the corn cane and its cost and value, at about present rates, would be:

PRODUCT PER TON OF STALKS.	
First sugar, 162.7 lb.	\$6.89
Second sugar, 26.3 lb.91
Molasses (very low av.)15
	—
	\$7.95
Less brokerage and freight15
	—
	\$7.80
Stalks—cost per ton	\$2.00
Stalks—transportation30
Stalks—manufacturing	2.50 4.80

Profit per ton stalks \$3.00

Or 38.5 per cent., without including any consideration of the exhausted chips for paper pulp, or for the other products we have mentioned. The quality of the pulp from the exhausted matter is superior to that from straw or wood. One variety of maize tested yielded at the rate of one ton of sugar to the acre, and 4,000 pounds of dry pulp and 2,500 pounds of food products, the latter being equivalent in value to 50 bushels of ripened corn. It is intended to manufacture sugar, cellulose and other products at the same works.—R. E. H., in *Country Gentleman*.

St. Louis, November 19th.

THE LEGUMINOUS CROPS AS FACTORS IN THE CHEAP PRODUCTION OF MILK.

We have repeatedly urged on farmers the importance of studying the question of the most profitable rations to be fed to milch cattle, and especially the importance of feeding rations rich in protein as part of the feed. The production of milk is a nervous function, depending largely not so much in the richness of the food fed as upon the influence exerted by that food on the nervous organization of the cow. Protein foods have been found much more influential in this action than the carbo-hydrates, and hence their feeding in due proportion is most essential in securing a constant yield of milk. The question of the particular form of the protein food to be fed is one of great importance in calculating the cost of the milk. Bran, as is well understood by most dairy farmers, is most valuable as a producer of milk. It is rich in protein but it is usually costly, and with wheat selling at over \$1 per bushel is likely to be still more costly. The legumes, like

alfalfa, cow peas, soy beans and clover are all especially rich in protein, and can well be substituted for bran. Cotton seed meal and old process linseed meal are also rich protein feeds, but are costly when compared with the leguminous crops. Prof. Soule conducted a series of experiments at the Tennessee Experiment Station on this question of the cheapest form of protein food for production of milk and butter, and thus summarizes the results:

1. The cost of producing milk and butter can be greatly reduced by replacing a part of the concentrates in the daily ration of the cow with some roughness rich in protein, such as alfalfa or cow pea hay.

2. A ton of alfalfa or pea hay can be produced at a cost of \$3 to \$5 per ton, whereas wheat bran costs \$20 to \$25. As a yield of from 2 to 3 tons of pea hay and from 3 to 5 tons of alfalfa can be obtained from an acre of land, it is easy to see the great advantage the utilization of these roughnesses in the place of wheat bran gives the dairyman.

3. In substituting alfalfa hay for wheat bran it will be best in practice to allow one and one-half pounds of alfalfa for each pound of wheat bran, and if the alfalfa is fed in a finely chopped condition the results will prove more satisfactory.

4. When alfalfa was fed under the most favorable conditions, a gallon of milk was obtained for 5.7 cents and a pound of butter for 10.4 cents. When pea hay was fed the lowest cost of a gallon of milk was 5.2 cents and a pound of butter was 9.4 cents. In localities where pea hay grows well it can be utilized to replace wheat bran, and in sections where alfalfa can be grown it can be substituted for pea hay with satisfaction.

5. These results covering two years' tests with different sets of cows, furnish proof that certain forms of roughness rich in digestible protein can be substituted with satisfaction for the more expensive concentrates, and should lend great encouragement to dairy farmers.

6. These tests indicate that with alfalfa hay at \$10 a ton and wheat bran at \$20, the saving effected by substituting alfalfa for wheat bran would be \$2.80 for every 100 pounds of butter and 19.8 cents for every 100 pounds of milk. The farmer could thus afford to sell his milk for 19.8 cents a hundred less than he now receives, and his butter for about 22, as compared with 25 cents a pound.

A GREAT JERSEY VICTORY.

The computations of the results in the St. Louis Dairy Demonstration have been now carried to such a point that the relative standing of the two great rival dairy breeds (the Jerseys and Holsteins) may be correctly stated.

In Test "A"—herds and individual cows entered for demonstrating the economic production of butter fat and butter—the value of butter in the case of the Jersey herd has been determined as \$1710.403. The cost of feed consumed by them during the 120 days of the test has been valued at \$722.507, leaving a net profit to the credit of the Jersey herd of \$987.896, or \$39.51 profit per cow.

The net profit of the Holstein herd in this test is \$29.20 per cow. So that the Jerseys have been demonstrated to be the more economical producers of butter to the amount \$10.31 per cow in 120 days.

Test "B" was for herds and individual cows entered for demonstrating the economic production of milk for all purposes relating to dairying. In this test the Jerseys produced fat valued at \$1743.206, and solids other than fat valued at \$327.073. Total value of product, \$2070.279. Cost of feed to produce same, \$722.507, leaving a net profit of \$1347.772, or \$53.91 per cow.

In Test "B" the net profit of the Holstein herd is \$46.85 per cow. Thus the Jerseys prove the more profitable producers of milk for all purposes of dairying by \$7.06 per cow for the 120 days.

As an economical producer of both milk and butter the Jersey, therefore, appears as leader in the greatest public test ever conducted, and justifies all that her friends have claimed for her. R. M. Gow.

November 15, 1904.

FEEDING THE TURKEYS.

The turkeys do not go so far on the range now, as the cold nights come on, but wait for a morning feed before starting out. They are making rapid growth. As we have only oats and corn, we feed a good many oats, as that is the best to grow frame. New oats just threshed are not a good food, as I have found to my sorrow, but at this time of the year after the oats have gone through a sweating process they will not hurt the turkeys if they are not fed to excess.

New corn is not good for them, but if it is shelled and boiled, it is one of the best and safest foods that can be given to aid growth and put on flesh.

I remember that some years ago when we did not have thoroughbred turkeys I had fine success with my mixed flock until they were attacked by lice from lousy hogs. We lost a good many and believed that they were dying with cholera, but now we know that the trouble was caused by feeding green corn, providing too little grit, and by the lice. I knew nothing of commercial grit then. We pounded up broken dishes and the birds improved for a while, but they still ate the green corn, and we did not know about the lice. If hogs are lousy the lice will get on the turkeys and often prove fatal. If one must feed new corn, it must be boiled; it is then easily digested

and does away with dangers caused by indigestion. It should never be fed hot, for I believe that warm food is one cause of roup, as I have seldom had a case of roup since I discontinued feeding warm food.—Mrs. Chas. Jones, in *Reliable Poultry Journal*.

MORE EGGS IN WINTER.

Transferring mature pullets to strange quarters retards egg production. The early pullets should be comfortably and permanently settled in their winter quarters early in the fall. They should receive a liberal allowance of animal and vegetable foods, oyster shells and grit, in addition to the whole grain and mashes, and should commence laying this month. The pullets are heavier layers in their first year than the hens, and for this reason they should constitute the flock of winter layers. The average egg-production of the pullets can be increased each year by breeding from the greatest layers. During the first winter the laying ability of each pullet is noted, either by trap-nests or by constant observation of the pullets on the nest; the next year the greatest layers of these pullets (now yearling hens) are fed lightly during the winter and placed in the breeding pens the following season. This method of constantly breeding from the heaviest egg-producers will rapidly increase the average yield of the females, and will establish a heavy laying strain in any variety.—*Reliable Poultry Journal*.

ASSOCIATION FIXES TOBACCO SCHEDULES.

The Interstate (Virginia and North Carolina) Tobacco Growers' Protective Association has adopted a scale of prices for leaf tobacco. It is claimed that this organization now has about 7,000 members, who are pledged to hold their crops for prices scheduled by the executive committee of the Association, which was appointed to establish equitable values. This committee reported that it costs Southern farmers on an average 10c. per pound to raise their tobacco and have it ready for market. Last season the Southern crop, they say, returned growers not over 7c. per pound. The following scale of prices is figured on an average basis of 12½c., which is considered equitable both from the growers' and buyers' standpoint:

Lemon wrappers, common to fine, 25@65c. per pound; orange wrappers, 20@60c.; bright mahogany wrappers, 18@35c.; dark, 18@40c.; bright fillers, 10@20c.; mahogany 10@22½c.; dark red fillers, 10@16c.; dark fillers, 8@16c.; tips, 8@12½c.; bright export leaf, 18@35c.; cutters, do.; bright smokers, 10@18c.; heavy smokers, 10@16c.; fillers, lugs, do.; low grades and trash, 5@9c.

Varieties of Corn for Planting—Soy Beans.

1. What is your opinion of the Southern Snowflake? Is it an early or a late corn, and will it suit hill and low grounds?

2. What corn do you think best suited to poor hills that will make about five barrels to the acre?

3. Do you think it will pay to raise soja beans here for hogs and feed.

A SUBSCRIBER.

Fluvanna Co., Va.

1. The White Snowflake corn is a good hill land corn, but not so well adapted for low ground, as some other varieties. It is a quick growing variety and makes excellent roasting ears. It does not grow very tall, but makes a good yield.

2. Hickory King is one of the best varieties for thin upland.

3. Yes. We know a number of farmers who grow large areas of soy beans for hogs and for a forage crop. We have a high opinion of the soy bean as a forage crop. It is more easily cured than cow pea hay and makes a heavy yield on good land, and will make a good crop on poorer land than cow peas.—Ed.

The Secretary of Agriculture in his report says: "The chief purpose of investigations in fruit marketing has been the determination of methods best adapted to the harvesting, packing, storing, and forwarding of fruits to points relatively distant, with a view to developing a wider demand for them. Much attention has therefore been given to the development of the trans-Atlantic export trade. Large and profitable shipments of Bartlett pears were made from Eastern orchards to British markets. It is known that more than 75,000 packages of this variety were exported, while the total shipments of Eastern grown summer and fall pears amounted to at least 165 car loads.

"An encouraging beginning has been effected in commercial shipments of American apples to French markets. The most important experimental export work has been done upon winter apples. The proportion exported has risen from less than 1 per cent. of the estimated total in 1899-1900 to nearly 4¾ per cent. in 1903-1904—a total of over 2,000,000 barrels, valued at nearly \$5,500,000."

The stable of runners sent out from Greenway Farm, Wilcox Wharf, Va., this season and raced under the name of R. Bradley & Co., won over \$8,000 at the Chicago tracks, of which amount \$4,125 stands credited to Ahola, bay filly, 4, Aloha, dam Mrs. Stuart, by Panique.

THE Southern Planter

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THE SOUTHERN PLANTER is mailed to subscribers in the United States and Canada at 50c. per annum; all foreign countries and the city of Richmond, 75c.

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.

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To Advertisers.

We wish to impress upon our advertisers the necessity of sending in all advertisements and matter pertaining to advertising, by the 25th of each month.

January Issue.

Our January issue will, as usual, be our regular Holiday Number. We are going to make it surpass all our previous efforts, both as to appearance and contents. We will look for the usual co-operation of our subscribers in helping us to extend our circulation, and will therefore have a copy of the Holiday Number with which to start all subscriptions. We think this issue alone will be worth the price of the year's subscription.

Advertisers are urgently requested to send in their copy at the earliest possible moment for their convenience as well as our own. There will not be enough space to go around—at least there wasn't in any previous similar number.

To Subscribers.

We are just on the verge of the usual tremendous rush in our subscription department. We are, therefore, going to ask the indulgence and patience of our readers in handling their subscriptions and club orders. If you do not get your papers promptly, rest assured they will be along in 10 days or two weeks at the most. We will greatly appreciate prompt attention to bills and notices, which are now being sent out. Beginning with December issue, all subscribers will receive their papers in a separate wrapper. No figures will appear opposite the name, as formerly, but you will always be reminded in ample time to renew your subscription.

Poultry Supplies.

If you want eggs during the winter, you must feed Animal Foods, such as

- Meat Meal,
- Beef Scraps,
- Blood Meal,
- Bone Meal,

to take the place of the insects, worms, etc., which poultry get in summer. OYSTER SHELLS and GRIT are also prime necessities..

Write for Prices and Catalogue telling what to use for Success and Profit with Poultry.

T. W. Wood & Sons, Seedsmen,
RICHMOND, - VIRGINIA.

We carry complete stocks of Cyphers' Incubators and Brooders, Poultry Foods, Egg Producers, Lice and Insect Powders, Poultry Remedies, etc.

Helpful Catalogue mailed free.

SAN JOSE SCALE and other INSECTS killed by GOOD'S

Gaustic Potash Whale-Oil Soap No. 3

Endorsed by U. S. Dept. of Agri. and State Experiment Stations. This soap is a Fertilizer as well as an insecticide. 50-lb. kegs, \$2.50; 100-lb. kegs, \$4.00; half barrel, 270 lb., \$3c per lb.; barrel, 425 lb., 3c. Send for Booklet, JAMES GOOD, Original Maker, 939-41 N. Front Street, 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.

“FUMA” kills Prairie Dogs, Woodchucks, Gophers, and Grain Insects. “The wheels of the gods grind slow but exceedingly small.” So the weevil, but you can stop their grind “Fuma Carbon Bisulphide” as others with EDWARD R. TAYLOR, Penn Yan, N. Y.



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.

BANK OF RICHMOND,

Main and Tenth Streets.

CAPITAL AND PROFITS, - - - \$1,134,938.14.

Special attention paid to out-of-town accounts. Correspondence invited.

Three per cent. interest allowed in Savings Department, Compounded semi-annually.

SALES AT BACON HALL.

Southern Planter:

With pleasure we report the following sales. Note much better inquiry for registered stock, and we still stick to the motto, "Satisfaction or no sale."

Having a son of the champion Berkshire, at St. Louis, at the head of our Berkshires, can furnish some prime pigs.

Sales Herefords.—Louis de Lacroix, of North Carolina, 1 bull; T. J. Meyers, of Maryland, 14 head Herefords; Honuquero Central Co. of Cuba, "Giltedge," a short 2-year-old, weighing 1,100 pounds; Herbert Hooper, of Maryland, "Bacon Hall," extra well formed February calf.

Berkshires.—J. T. Sharpless, of Pennsylvania, boar; Frank Walter, of Virginia, sow; T. J. Myers, of Maryland bred sow.

Muscovy Ducks.—H. S. Bowen, of Virginia, 4 head; C. M. Bolton, of Virginia, 1 diake.

Yours truly,
E. M. GILLET & SON.

Bacon Hall Farm.

WIRE FENCE at Wholesale. A 4-inch stock fence 29¢ per rod. Send for price list and FREE catalogue of Wire Fence and full line of Fence Supplies.
W. H. MASON & CO., Box 80 Leesburg, Ohio.

FENCE STRONGEST MADE. Bull-tight. Sold to the Farmer at Wholesale Prices. Fully warranted. Catalog Free
COILED SPRING FENCE CO., Box 334, 52 Winchester, Indiana.

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

BEATS ALL FARM FENCE SCHEMES FOR and WE WANT AGENTS TO MAKE MONEY
B. B. FENCE CO., Peru, Ind.

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

BROWN PAYS THE FREIGHT Heaviest Fence Made. All No. 9 Steel Wire 15 to 35 CENTS PER ROD DELIVERED We also sell direct to farmers at wholesale prices. Coiled Spring, Barb and Soft Galvanized Wire. Write for Fence Book showing 220 styles.
THE BROWN FENCE & WIRE CO. Cleveland, Ohio

Genuine Spiral Spring Wire FENCES AND GATES If your dealer does not have our goods in stock you can buy direct at Manufacturers' Price. Write for Catalogue and secure agency
INTERNATIONAL FENCE AND F. CO. Columbus, Ohio.

GINSENG & RAW FURS Wanted; full value for your goods. Write for price lists. Address H. C. METCALF, Ainstead, N. H.

PAGE POULTRY FENCE

THE STAND-UP KIND made of the same strong quality of coiled wire as Page Stock Fences—stretches up like a fence, requires fewer posts and no top or bottom boards. 20, 23, 26 or 28 horizontal wires. 48, 58, 72 or 78 inches high, with bottom spaces only 1 1/4 inches. The intermediate horizontal wires are number 14 and stand a strain of over 900 pounds each, while the top wire and bottom wire are even larger and stronger. All wires are heavily galvanized—


A POWERFUL FENCE

—Fences poultry in, stock out—costs no more erected than common nettings and will outlast 20 of them. If you want to pasture your bull next to your poultry yard, no other poultry fence will do. Leading poultrymen all over the country endorse Page Poultry Fences. Our catalogue tells why they are better investments. It costs you nothing to investigate.

90 DAYS' FREE TRIAL—Let us tell you about our 90 days' free trial offer on Page Poultry Fences.

FREE PARING KNIFE To all needing fencing, who will write for catalogue, we will send a sample of our wire made up into a Paring Knife, which illustrates the superior quality of open-hearth, high-carbon steel used in the manufacture of Page Wire.

PAGE WOVEN WIRE FENCE CO., Box 5118, Adrian, Michigan



PAGE
POULTRY

HERE'S A FEED GRINDER.
We have been greatly interested in the Latest Ditto's Feed Grinder, for it has revolutionized the grinding of ear corn and other grains. A large number of our subscribers purchased the Ditto last year and are extremely enthusiastic in its praises. Mr. Ditto seems very confident of the truth of every claim he makes for it, for he authorizes us to say that he will send to any responsible farmer one of his two-horse sweep mills for 10 days' free trial, with no money in advance. He guarantees that it will grind at least 20 per cent. more grain than any other two horse sweep mill, and be easier on the horses at that. Its light draft is due to the fact that it is the only ball-bearing sweep made; it is triple-gearred and by an ingenious arrangement the grinding rings are held apart when the mill is running empty, so that they never touch or grind upon each other. This, of course, makes for long life of grinding rings—a most important consideration.

Mr. Ditto can be depended upon to live up to every agreement he makes, and we trust that our readers who need a grinder will take advantage of his liberal offer. Send to him (G. M. Ditto, Box 48, Joliet, Ill.) for his grinder booklet. You'll be interested.

A rake is mighty useful as a garden tool, but it makes a poor curry-comb for your horse. It's a worse mistake, though, using common soap to shave with. Even the best laundry or toilet soap, when used for shaving, will do for your skin just what a rake would do to your horse's hide. Williams Shaving Soaps are made especially for shaving by people who have been at it since 1840; and they have learned a good many things. Take advantage of the offer made elsewhere in this paper and you will reap the fruits of their 65 years' study.

WIRE BOARD FENCING
Has many Advantages over any other style. Let us mail sample and tell you all about it.
THE TRUSS & CARLE FENCE COMPANY, 82 Doan Ave., Cleveland, O.

HARD STEEL
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 FENCE CO., Cuyahoga Falls, O.

Union Lock Poultry Fencing

As It Looks When Erected

Strongest and Best

By Every Test.

Has been fully tested by leading poultrymen. All heights (12 in. to 7 ft.) Has fine mesh for small chicks. Over 1,000 rods of this fence used on Lakewood Poultry Farm, New Jersey. You will be pleased with it.

Our Low Price will Surprise You.

We will ship from mills in Connecticut, Illinois and California, and guarantee prompt delivery. Catalogue of Farm and Poultry Fencing sent free.

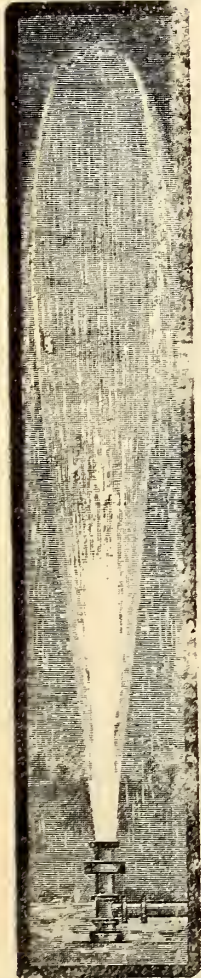
Write Us What You Want. Do It To-Day.

CASE BROTHERS,
16-22 Main St., Colchester, Conn.

A neat Binder for your back numbers can be had for 25 cents. Address our Business Office.

ARTESIAN WELLS.

Many of the readers of this magazine do not know that we



make a specialty of drilling artesian wells. We have drilled the most notable wells in the states of

Virginia and North Carolina.

Among them the wells for the Jefferson and Murphy's Hotels in Richmond.

If interested, write for prices.

SYDNOR PUMP and WELL COMPANY, INC.

Box 949, - RICHMOND, VA.

GOOD HOUSEKEEPING.

STUFFED PARTRIDGES.

This is a new way to cook birds, and you will find it most satisfactory for a game supper. Select the birds that are very little shot about the body, pick them, and prepare as you do a turkey or chicken for roasting. Pour hot water through the body until all the blood is washed out, then rub inside with a little salt and celery seed. Make a stuffing of bread crumbs, salt, pepper and butter, and fill each bird; tie them up and roast until a nice brown, basting constantly. Serve one to each guest in a nest of curled parsley or celery leaves.

STEWED BRAINS.

Wherever I go I see brains fried, scrambled, or broiled, but I never see them stewed, and they are much more delicious that way than any other. If you do not believe it, just get a set of brains from your butcher, and pour boiling water over them. This makes the skin come off more easily. After the skin has been removed let them stand a little while in cold water with a little salt in it to whiten. Then put them into a pan with a cup of milk and let them stew gently for ten or twelve minutes. Add a teaspoon of butter, salt, pepper to taste, and serve very hot with buttered toast. If you can add a half cup of cream just before taking them from the fire, all the better.

CALF'S HEAD PUDDING.

Soak a head all night in salt water to extract the blood. The next day put it on in a large porcelain or granite kettle, well covered with water, and let it boil for five or six hours. The size of the head must decide the length of time to cook. When it is cool enough to handle pick the meat carefully from the bones, and chop it into small pieces. Put the water away to make soup with for dinner. Put the meat into a pudding dish with a layer of bread crumbs; season with pepper, salt, thyme, and cover with another layer of crumbs, adding a few dabs of butter, and bake brown. If you like onion, it is a very great addition to the seasoning. To make the soup of the liquor, boil and skim, thicken with brown flour; season with a few cloves, nutmeg, pepper, salt, red pepper and sage, and just before taking off add a cup of some light wine, and serve with toasted bread, and your guests will never know that it is not turtle soup.

APPLE PIES.

Make a rich crust and bake it in the pie pans. Fill with stewed apples and cover the apples with meringue made with the whites of two eggs beaten stiff; one cup of sugar and a teaspoon of lemon extract. Set the pie back in the stove and brown slightly. Drop dabs of damson preserves about on top and serve cold.

SWEET POTATO PUFFS.

Make a rich paste, roll thin and cut in pieces the size of a saucer. Boil the sweet potatoes done, take off the skins and beat them up with butter, sugar, nutmeg, mace, and a little vanilla; put



Your Feeble Old Wagon
has many years' service in it. Replace its shabby wheels with **ELECTRIC Metal Wheels.**
Made to fit any skein. Straight or staggered oval steel spokes, cast in the hub, hot riveted in the tire. Broad tires save rutting and draft. Any height desired. Write for free catalogue for particulars.
ELECTRIC WHEEL CO., BOX 146 QUINCY, ILLINOIS.

Let Us Send You Our Book.
about good wheels and good wagons that will save you a lot of work and make you a lot of money—the **ELECTRIC STEEL WHEELS**—and the **ELECTRIC HANDY WAGON.**
By every test, they are the best. More than one and a quarter millions sold. Spokes united to the hub. Can't work loose. A set of our wheels will make your old wagon new. Catalogue free.
ELECTRIC WHEEL CO., Box 146, Quincy, Ills.



ELECTRIC

BUGGIES.

SURRIES, DAYTONS, RUNABOUTS, SPINDLE WAGONS, CARTS,
etc. 84 different styles and grades. Finest material and workmanship. Get our prices and see our vehicles before purchasing. **SAFETY BUGGY CO., 1309 E. Main street, Richmond, Va.**



SUPERIOR

Adjustable Storm Hood, non-elastic. Fits different buggies. Can be attached or detached in half a minute. Two extra large lights. Gives complete view. The most serviceable hood made.
Write for Illustrated circular. Address **J. B. CRETORS, Mfr., 61 Poplar st., St. Paris, Ohio.**



WE'LL PAY THE FREIGHT
and send 4 Buggy Wheels, Steel Tire on, - \$7.25
With Rubber Tires, \$15.00. Infl. wheels \$4 to 4 1/2.
tread. Top Buggies, \$28.75; Harness, \$3.60. Write for catalogue. Learn how to buy vehicles and parts direct.
Wagon Umbrella FREE. W. V. BOOB, Cincinnati, O.

HARRIS HARDWARE CO.

409 E. Broad st., Richmond, Va.
Breech-Loading shotguns \$3.85
Pocket Knives
Rifles
Revolvers
Robin Hood
Loaded Shells
GUNS
Bicycles and Sundries.
Hunting Leggins
Razors and Scissors
Hunting Coats
Gun Covers
WE ARE AGENTS FOR GOOD THINGS.



INTERNATIONAL KEROSENE ENGINES
Stationary, Portable, Marine, for Lighting, Pumping and Hoisting Outfits, all kinds of machinery, Launches and Boats. Send for catalogue and prices.
INTERNATIONAL POWER VEHICLE CO., 354 Third St., Macon, Ga.

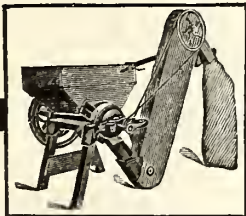
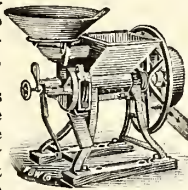
EASY TO DEHORN



your cattle with the **KEYSTONE** Dehorning knife. Operation performed in an instant with little pain. Leaves stump so that it heals quickly. The **KEYSTONE** Dehorner is sold on a money back guarantee. Send for free booklet giving valuable dehorning facts.
M. T. Phillips, Box 45, Pomeroy, Pa.

Feed Mill Sense.

Feed mills have come to be standard articles. Experimenting with new makes is likely to prove unsatisfactory and costly. In the interest of our readers who are without experience and unable to choose between the many different makes, we direct attention to the old reliable Quaker City Grinding Mill manufactured by The A. W. Straub Co., 3737 Filbert St., Philadelphia, and 47 Canal St., Chicago. These mills, made in 8 different sizes to meet every possible want, have an honorable record of 33 years. They are honestly built, right working, do a wide range of work and are easily regulated for coarse or fine grinding, and certainly have given eminent satisfaction to a long list of users for many years. They grind cob or shelled corn and all grain used for feed stuffs, coarse or fine, mixing thoroughly, all in the same operation. The Quaker City is a dependable mill out of which every user can depend upon getting satisfactory work. The 38th Annual Catalogue with all details may be had by writing the manufacturers at either of the addresses given above. Feeders without mills will serve their own interests by sending for it.



Satisfy Yourself

by trial at home (nothing to pay if it fails) that you can grind ear and shelled corn and all grains and mixed feeds easier, faster and better with the

New Holland Feed Mills

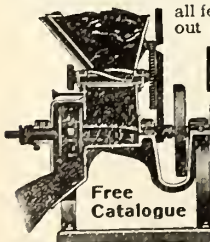
than any other. Trial is absolutely free. Order with that understanding. 4 sizes and 3 styles, including small hand power. Saw your wood with New Holland Wood Saws and save labor. Three sizes.

Ask for free circulars and prices.

New Holland Mch. Co., Box 153, New Holland, Pa.

GRIND FINE OR COARSE

all feeds, ear corn, with or without husks, all grains, with the



KELLY DUPLEX Grinding Mills

They are the speediest, easiest running, strongest and most durable mill made. Four sizes, any power. New double cutters, force feed, no choking. It is true economy to buy a Kelly Mill.

THE O. S. KELLY CO., 159 N. Lime St., Springfield, Ohio

Cut! Crush! Shred!

Prepare your fodder so stock will get all the nourishment. No waste if you use



Heebner's Feed Cutters.

Prepare corn so stock eat it all and thrive on it. With shredder attachment (\$6.00 extra), you have three machines in one for molasses and all feed cutting. We make Tread and Lever Powers, Thrashers, Wood Saws, etc. Catalogue mailed free. Heebner & Sons, 25 Broad St., Lansdale, Pa.

a tablespoon of this on one side of the pastry and turn the other side over; dampen the edges to make them stick together, and bake. These are really very good, and make a nice addition to a lunch or cold tea.

FRUIT CAKE.

Six cups of flour,
Four of sugar,
Four of butter,
Twelve eggs, beaten very light, separately.

One pound of raisins.
One pound of currants.
One-half pound of citron; shave as thin as possible.

Two teaspoons of powdered cinnamon.

Two teaspoons of powdered nutmeg.
Two teaspoons of powdered cloves.
One glass of brandy. Makes two loaves.

SPICE CAKE.

Four cups of sifted flour, one of butter, three of sugar, one of molasses, half a cup of sour milk, one teaspoon of soda, three eggs, one teaspoon of ginger, one of alspice, one of cinnamon, one of cloves, one of mace (all these spices must be powdered). If you choose, add a cup of dried cherries, a cup of raisins, and a cup of currants and a cup of nuts chopped fine, and bake in loaves.

NUT CAKES.

One pound of nut kernels, chopped. If you use almonds or English walnuts, blanch the kernels. One pound of sugar; the whites of six eggs, beaten very stiff; two tablespoons of flour. Drop on buttered paper and brown quickly in a hot oven.

GELATINE JELLY.

Soak a box of gelatine three hours in a pint of water. Add one pint of wine, two pounds of sugar, a little mace, the rind of a lemon shaved off. Pour over this two quarts of boiling water (in very cold weather you can use three quarts of water). Stir until all is mixed and the gelatine dissolved; then add the juice of the lemon and strain. Put in a cold place, and it will keep more than a week.

DRIED CHERRY PUDDING.

Three cups of flour, two cups of fruit, one cup of molasses, one cup of milk, two teaspoons of cream tartar, one cup of chopped suet, or butter, one teaspoon of soda. Mix all as well as possible, and put into a mould or bag and boil three hours. Serve with sauce made with butter and sugar and nutmeg, with a glass of wine, all beat together. You can use any fruit in this way and it will be just as good.

CARAVEN.

Finlayson, Minn., August 10, 1904.
Box 47.

Dr. B. J. Kendall Co.
Enosburg Falls, Vt.

Gentlemen:—Please send me one of your books, "A Treatise on the Horse and His Diseases." I have been using Kendall's Spavin Cure. It is the best horse remedy in the world.

Yours truly,

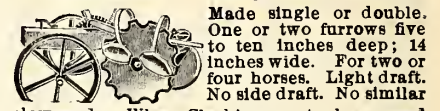
ALFRED MATSON.

Clark's Tools for Large Hay Crops



Clark's Rev. Bush Plow and Harrow cuts a track 5 ft. wide, 1 ft. deep. Connects the sub-soil water. It is an excellent machine for covering in sugar cane. Strength guaranteed. Can plow a newly cut forest, stump, bush, or bog land; leaves land true, clean for any crop.

Clark's Double Action Cutaway Harrow moves 15,000 tons of earth in a day.



Clark's Rev. Sulky Disc Plow. Made single or double. One or two furrows five to ten inches deep; 14 inches wide. For two or four horses. Light draft. No side draft. No similar plow made. When Clark's grass tools are used as directed in his grass circular, we, the C. H. Co., guarantee them to kill wild mustard, charlock, hard hack, sunflower, milk weed, morning glory, Russian thistle or any other foul plant that grows, or money refunded. Now is the time to commence work for next year's seeding to grass.

THE CUTAWAY HARROW CO.,
Higganum, Ct., U. S. A.

STAR PEA HULLER

WONDER OF THE AGE.

Guaranteed to hull and clean 10 to 15 bushels of peas per hour by hand, or 20 or 30 bushels by power. Write for circular and prices.

STAR PEA MACHINE CO.,
Chattanooga, Tenn.

BALE YOUR OWN HAY.
MILLET SORGHUM PEAVINES ETC.

WITH A "HANDY" BALER THE STRONGEST, MOST POWERFUL, SWIFTEST AND LIGHTEST OPERATING HAND PRESS EVER PUT ON THE MARKET.



FINISHES ABSOLUTELY UNIFORM BALES. STANDARD SIZE. EITHER LIGHT OR HEAVY. **LITTLE GIANT HAY PRESS CO.**

DALLAS, TEXAS. WRITE FOR PARTICULARS. CATALOG HAND & HORSE POWER PRESSES FREE.

TRY THIS MILL

10 Days Free. I will send any responsible farmer one of

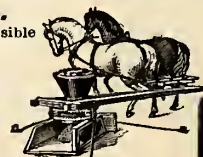
Ditto's

Latest Double Cut, Triple-Geared Ball-Bearing

Feed Grinders

On Ten Days Trial—No Money in Advance. If it does not grind at least 20% more ear-corn or other grain than any other two horse sweep mill made, send it back at my expense. Don't miss this offer. Ball-bearing throughout. Only 10 ft. sweep. Light draft. Grinding rings never touch each other—they last for years. Both grinders revolve; self-cleaning. Ask for new Catalogue.

G. M. Ditto, Box 48 Joliet, Ill.



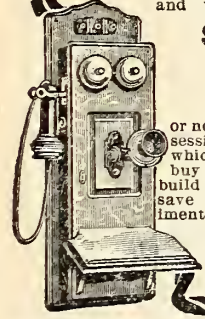
Telephone Facts

Facts are what the farmer wants, whether buying a team or a telephone. If you want to know how others have built successful telephone lines write for free book II. Our hook R 113 "Telephone Facts for Farmers" gives the facts you ought to know about telephones for farm use, and whether you buy

STROMBERG-CARLSON TELEPHONES

or not you will be in possession of information which will enable you to buy the right telephone, build the right line and save unnecessary experimenting. We send it free.

Stromberg-Carlson Tel. Mfg. Co., Rochester, N. Y., Chicago, Ill.



TELEPHONES

and line material for FARMERS' LINES

So simple you can build your own line. Instruction book and price list free.

The Williams Telephone & Supply Co., 66 Central Ave., Cleveland, O.



—GREAT—

HARNESS INVENTION.

FONTAINE SAFETY TUGS

prevent sores and white spots on horses' backs by regulating tension of girth as if it were elastic. Prevent buggy running against horse if breeching breaks. Prevents girth breaking and shafts wobbling. Made of best single leather. Outlast other tugs. Handsome in appearance. For sale by D. A. Brown's Son, Richmond, Va. Pair sent postpaid for \$1.50. Write for circular. THE FONTAINE CO., Christie, Va.

SAWS

ANY WOOD IN ANY POSITION ON ANY GROUND 4 in to 5 ft. Through 1 Man with a Folding Sawing Machine Beats 2 MEN with a Cross-cut Saw 6 to 8 cords daily is the usual average for one man.



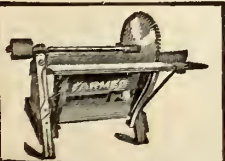
Our 1905 Model Machine saws faster, runs easier and will last longer than ever. Adjusted in a minute to suit a 12-year-old boy or the strongest man. Send for catalog showing latest improvements. First order gets agency. Folding Sawing Mach. Co., P. O. Clinton St., Chicago, Ill.

SAW Wood

and say nothing. You'll save labor and yet accomplish something with the fast cutting

New Holland Wood Saws

With ripping table and adjustable gauge for ripping boards, pales, lath, etc. Made in 5 sizes, 1 to 12 h. p. New Holland Feed Mills in 3 styles and 4 sizes are best grinders made. Write for free booklets. New Holland Mch. Co., Box 153 New Holland, Pa.



MONTANA NEWS.

Almost might one think that in the old days some king did reign here supreme in medieval style, for the trail by which the railroad finds its way up the canyon of Belt Creek into the midst of the Belt Mountains, climbs upward, upward, unt' l Monarch sits 1,000 feet above Great Falls, a coign of vantage. A side canyon, steeper and yet more picturesque than the Belt canyon leads out of this wild country on to a series of high agricultural lands which are at once an astonishment and a delight to the eye. Is it possible, one asks, that here, 5,000 feet high and yet within sight of the Great Falls smelter smoke-stack, lies an undulating farming section as prosperous and productive as, perhaps, any region of the world? Farmers were coming down this canyon with hay, grain and potatoes for market. How much are you getting for your hay this year, I asked. Eleven dollars was the reply. And what are oats worth? Oats were \$1.25 a hundred pounds in this section, and weighed 40 and 45 pounds to the bushel. How was the potato yield this year, I asked one man driving along with a ton or more of stacked spuds. He was a Swede. Well, he said, pretty fair. Not too much. Pretty fair. That was all I could find out. Which reminded me of the incident of the engineer running on a southern Illinois train who had a new fireman, and when he sent him back to see how much water there was in the tank, all he could learn was that there was "right smart." So he looked himself and found "right smart" to be exactly nine inches. Later I discovered that "pretty fair" probably corresponded to about 125 or 150 bushels to the acre.

Now, the wonder of this Kibbey section, so-called, which includes very many square miles of fine farm land, is that though you are in sight of the desert, yet you might think yourself in the rolling country of Illinois. There is abundant moisture for the growing of enormous crops and no irrigation is practiced. This year is the dryest in the history of Montana, and yet no crops of oats, which I saw ran less than 35 bushels, some 45 bushels to the acre; wheat 20 and 25 bushels and timothy hay a ton and a half—fairly good for what the farmers term a failure year.

It is passing strange that here in the midst of the foot-hills of the Rockies, in a state generally understood throughout the country to be largely desert and requiring irrigation for farming lies in a big community which is, I verily believe, as productive as any section of the United States, as capable of producing, acre for acre, year in and year out, as great a crop value as any section of the United States. For three feet deep the earth is a solid manure. It is no more a desert than is the Louisiana bottom.

Yet a 160 farm in the Kibbey coun-

The Best Cooking Range Made,
Sold for Cash or on Monthly Payments.
\$10 to \$20 Saved.

FREIGHT PAID.

Clapp's Ideal Steel Range

Your money refunded after six mos'. trial if

is not 50 per cent better than others. My superior location on Lake Erie, where iron, steel, coal, freights and skilled labor are cheaper and best, enables me to furnish a TOP NOT H Steel Range at a clean saying of \$10 to \$20. Send for free catalogues of five distinct lines, over 50 styles and sizes, with or without reservoir, for city, town or country use. **CHESTER D. CLAPP, 247 Lynn St., Toledo, O.**
(PRACTICAL STOVE AND RANGE MAN)

THE IMPROVED SCREW STUMP PULLER
Write for Prices.

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

HERCULES STUMP PULLER

Clears an acre of heavy timber land 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.

The Monarch Stump Puller.

The best on earth; you make no mistake in buying of a man of 5 years experience in pulling stumps. Wset up the Puller and guarantee satisfaction before we want your money 5 sizes Write for catalog and prices.

JOS. W. RITCHIE, State Agent, R. F. D. No. 39, Grostoes, Va.

STUMP PULLERS SEVEN SIZES

\$17.50 UP

DEPT. P. W. SMITH GRUBBER CO LACROSSE WIS

WE PAY THE FREIGHT CATALOG FREE

OPIUM


and Whiskey Habits cured at home without pain. Book of particulars sent FREE. **B. M. Woolley, M. D., Atlanta, Ga., 103 N. Pryor St.**

Cheap eggs are as good as cheap lamp- chimneys. MACBETH.

If you use a wrong chimney, you lose a good deal of both light and comfort, and waste a dollar or two a year a lamp or chimneys.

Do you want the Index? Write me.

MACBETH, Pittsburgh.



**Hardie
Spray Pumps**

The Success of Southern Peach Growing Depends Upon the quality of the Fruit.

Perfect fruit is only possible from healthy trees Six days work for two men will thoroughly spray an orchard of 1 000 trees with a Hardie Spray Pump, and no branch of fruit culture will pay such big dividends as spraying.

Our Book On Spraying gives you all the information you need on this subject including all the best formulas giving you the secret of the success of the men who have made big money in fruit growing.

Send for this book to-day. It's free.

104 Mechanic St.,
Hook-Hardie Co., Hudson, Mich.



**Defender
Sprayer**

All brass, easiest working, most powerful, automatic mixer, expansion valves, double strainer. Catalogue of Pumps and Treatise on Spraying free.

AGENTS WANTED:
J. P. Gaylord, Box 82 Catskill, N. Y.



WARRINER'S CHAIN HANGING STANCHION

CLEAN, SAFE, DURABLE AND COMFORTABLE.

WALLACE B. CRUMB, FORESTVILLE, CONN.
P. O. BOX 440

try, and in what is known as the "Michigan Settlement," with barn, granary, cabin and other real improvements, sold this year for \$1,400. Why? because half the country has been taken up under the desert land law, an utter violation of that law, for there is no possible way of watering the land artificially as required by the law, and people, even those living in Great Falls with its 20,000 inhabitants, clearly visible from this land, believe that this is desert land in reality, and some of them will tell that a man will starve to death on 160 acres. The business men of Montana are the most short-sighted of men. The Kibbey region is one of a hundred in the State, some of them of great extent, all of them lying among the mountains at elevations of from 3,000 to 5,000 feet where the soil is the black gneist of the mountains, surcharged with potash, phosphorus, and nitrogen, the chief elements of fertility, and with the rainfall sufficient for grand crops, where the climate is as near perfection as can be found, a bit cold, perhaps in winter months, but bracing and invigorating, and the kind that develops fibre and produces strong and rugged men. Yet these merchants grovel to a few stockmen, who would monopolize these fertile valleys for the grazing of a comparatively few sheep and cattle, rather than see them settled with the dense agricultural population, which would flock to them if the facts were known, which would bring wealth and greatness to the State.

The country through which I traveled was about a third settled, hardly that. The rest of the land was held by stockmen, speculators, fraudulently acquired under the desert land law. Tom Jones enters a homestead of 160 acres. Next he makes a desert filing alongside of his 160, then his wife takes up 320 acres under the desert law which requires no residence. This acreage, not being sufficient to satisfy Jones's land hunger, he prevails upon Jim Smith, Bill Williams, and Sam Brown who live in some adjoining town to take up each 320 acres adjoining his land and turn it over to him for a matter of fifty or a hundred dollars a piece. Jones, of course, relieves these stool pigeons of the responsibility of making the irrigation improvement supposed to be required by the government, and of making any cash outlay, but in this section of country under discussion these improvements are nil—they have never been made. And it may be added that this Bill Williams-Sam Brown string of dummies can be carried on indefinitely, and, is the case in many instances in Montana, simply depending upon the ability of the land grabber to supply the \$1.25 per acre which the government must receive for so-called desert lands.

There have been thousands of fraudulent entries in Montana under the

"FEED THE PLANT AND THE PLANT
WILL FEED YOU."

CANADA UNLEACHED HARD-WOOD ASHES IS "NATURE'S OWN FERTILIZER."

It is no experiment, and makes good crops.

Write for prices and particulars.

WE KNOW IT WILL PAY YOU.

T. C. ANDREWS & CO.,
Norfolk, Va.

Agricultural Lime, Land Plaster, Fertilizers at
Bottom Prices.

—Genuine Imported—
PERUVIAN GUANO

Absolutely pure and not
manipulated.

A FINE NATURAL BIRD MANURE.

NEVER HAS BEEN EQUALLED.
NEVER WILL BE EQUALLED.

SHIPMENTS FROM NORFOLK, VA.
WILMINGTON, N. C.

SMITH-DAVIS CO., Importers,
WILMINGTON, N. C.

CANADA UNLEACHED Hard-Wood Ashes.

Rich in Potash, Phos. Acid, and Phosphate of Lime. The best known top dresser for strawberry plants. The cost is much less than manipulated fertilizers. Genuine tonic for poor land. The results are always satisfactory. AGRICULTURAL LIME, PLASTER, NITRO CULTURE, FERTILIZERS, etc.

PERCY L. BANKS,
P. O. Box 182, Norfolk, Va.

SAVE THAT PORKER.

To any person sending us 25 cents in stamps or silver we will send by mail a bottle of GREGORY'S ANTISEPTIC HEALING OIL, guaranteed to cure every case of Cholera in hog or chicken if administered in first stage of the disease. Cures colic in man or horse in one to three minutes. If it fails drop a postal card and we will return stamps or money. Full directions given. GREGORY MEDICINE CO., Conway, Ark.

Send now, as this ad. will not appear but three times.

For Sale or Trade.

A Western threshing outfit, 12 horse power, good traction engine and a fine Case Separator. One year used. Price very reasonable. Will trade for cattle, horses or land.

MEYER & JEHNE, Farmville, Va.

ENGINES; 13 Horse Traction \$250; 10 Horse Traction \$'00; Boilers, Engines new and second hand from 4 to 100 Horse. Single saw mill \$125; Double mill \$150; Machinery of every description at one-third actual value
D. CASEY, Springfield, Ohio.

NOT A FAILURE

In Twenty-Five Years.

There may be some better criterion of the value of an article than the "test of time," but if there is we do not know of it.

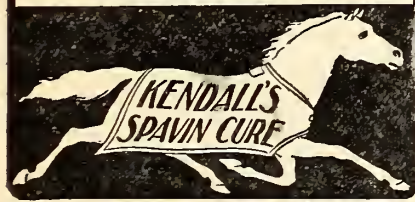
Kendall's Spavin Cure

has stood this "test of time" and is more popular to-day than ever before. Unequalled for Spavin, Ring Bone, Curb, Splint and all forms of Lameness. Read the unsought endorsement of others and then act for yourself.

Tippettville, Ga., February 14, 1903.
 Dr. B. J. Kendall Co., Enosburg Falls, Vt.
 Gentlemen:—I have been using your remedies for about twenty-five years with success. I keep your Spavin Cure all the time. I have never known of a single failure where it was used according to directions. I think it is the grandest remedy on earth for what you recommend it. I can tell of a number of cases where it was used that got well in a few days that seemed almost hopeless. Please mail me your "Treatise." Very truly yours,
 A. B. WALDEN.

Price, \$1; six for \$5. As a liniment for family use it has no equal. Ask your druggist for Kendall's Spavin Cure, also "A Treatise on the Horse," the book free, or address,

DR. B. J. KENDALL COMPANY,
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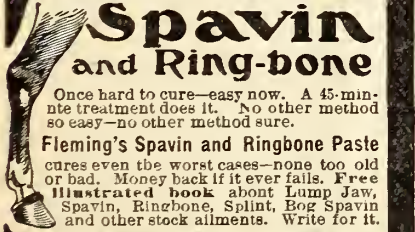
Lump Jaw



Save the animal—save your herd—cure every case of Lump Jaw. The disease is fatal in time, and it spreads. Only one way to cure it—use

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No trouble—rub it on. No risk—your money back if it ever fails. Used for seven years by nearly all the big stockmen. Free book tells you more.



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 Once hard to cure—easy now. A 45-minute treatment does it. No other method so easy—no other method sure.
 Fleming's Spavin and Ringbone Paste cures even the worst cases—none too old or bad. Money back if it ever fails. Free illustrated book about Lump Jaw, Spavin, Ringbone, Splint, Curb Spavin and other stock ailments. Write for it.
FLEMING BROS., Chemists,
 280 Union Stock Yards, Chicago, Ill.

SLOAN'S LINIMENT

50¢ & 1.00 Cures Swine Disease & Hog Cholera

SEND FOR CIRCULAR WITH DIRECTIONS

DR. EARL S. SLOAN, 615 ALBANY ST. BOSTON, MASS.

desert act, an act constructed, and innocently passed by Congress for the purpose of allowing public land stealing in the West. Should the people of Montana set their faces against this nefarious law and insist upon the carrying out of the principle of the old homestead law, with its original five-year residence provision, the population of the State could be surely doubled within ten years.

There are many people in the east, now becoming somewhat densely populated, who would gladly grasp the chance to obtain a free homestead such as their fathers found in Illinois and Iowa, and they would come out and take up the land of these new sections as they are discovered in this great State, 470 miles in length—for they are being discovered every year—and make prosperous and contented farm citizens, a bulwark and a wealth producer to the nation. As is usually the case in such matters, the State is too short-sighted; the nation must step in. A few men who are making vast fortunes largely control public sentiment and would prefer that the present system continue. But the public land policy must be changed, in Montana and in other Western States where such conditions exist. The laws under which land stealing is rife must be amended and repealed, and an honest handling of the people's domain be substituted. The spirit of the Old Grow Homestead law must be revived and this wholesale grabbing checked with a strong hand. In this way, and only in this way can we provide for our surplus population seeking new homes, and at the same time prevent great landed monopolies from controlling the destinies of our new States.

"A boy gets out of owning a gun all the joy there is in it," says a well-known writer in the Illustrated Sporting News. "There are mighty few pleasures, anyway, that a man can have that boy does not have on a smaller scale, but more intensely.

"Some boys are hungrier for guns than others—that is partly a matter of what there is handy to shoot—but I never knew a boy who did not want a gun, and did not delight in it when he got it. It is not because of any innate murderousness in the boyish disposition, but merely because the gun means power, suggests a relaxation of apron strings, and is an exceedingly important and interesting piece of mechanism."

Such opinions have been offered by writers the country over. The movement for this "gun education" of the American boy was begun by the J. Stevens Arms and Tool Co., of Chicopee Falls, Mass., makers of the famous "Stevens" firearms. The catalogue of this company is a mine of information on gun owning, and makes excellent winter night reading for grown-ups as well as for the boy. It will be mailed upon receipt of four cents for postage.

Horse Owners! Use

GOMBAULT'S



Caustic Balsam

A Safe, Speedy, and Positive Cure

The safest, Best BLISTER ever used. Takes the place of all liniments for mild or severe action. Removes all Bunches or Blemishes from Horses and Cattle. SUPERSEDES ALL CAUTERY OR FIRING. Impossible to produce scar or blemish. Every bottle 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. THE LAWRENCE-WILLIAMS CO., Cleveland, O.



DEATH TO HEAVES Guaranteed

NEWTON'S Heave, Cough, Blemper and Indigestion Cure. A veterinary specific for wind, throat and stomach troubles. Strong recommends. \$1.00 per can. Dealers. Mail or Ex. paid. The Newton Remedy Co., Toledo, Ohio.

NO MORE BLIND HORSES.

For Specific Opt. almia, Moon Blindness, and other Sore Eyes, Barry Co., Iowa City, Ia have a sure cure.

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Chartered by State of Virginia.

A Fire Insurance Association for Farmers of Eastern Virginia.

Organized January 9, 1899; amount insured January 9, 1904, \$400,000; policies secured by real and personal property, estimated value, \$1,000,000. Send for statement of plan and book of membership to CHAS. N. FRIEND, General Agent, Chester, Va.

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Country salesmen wanted. We teach art of selling, pay commission, and guarantee salary. Great opportunity for young farmers and teachers to learn business. J. B. CRABTREE, Richmond, Va.

WANTED,

Position as Manager

of a fully equipped estate by a man of practical experience and agricultural college training. Salary or shares considered. A. G., care Southern Planter.

WANTED,

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on farm; experience in farming, dairy, truck, poultry and stock raising. References exchanged. T. R. P., 3 W. Grace, Richmond, Va.

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Prof. Henry's Great Book for Farmers and Stockmen.

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WERE AWARDED THE

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at Louisiana Purchase Exposition
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Our New Catalogue issued in January will contain full information about improved Seeds, Crops, Culture and valuable hints to farmers and gardeners.

Mailed Free if you mention this paper.
WOOD-STUBBS & COMPANY, Seedsmen, Louisville, Ky.

Emporia Nurseries

are now offering at reasonable prices No. 1. APPLE TREES, 1 and 2 yr., mostly late kinds, of high grade stock, which is being praised as the FINEST STOCK EVER OFFERED IN THIS COUNTRY. KIEFFER PEARS, 1 and 2 yr., GRAPE VINES, SHADE TREES, PEACH, PLUM, MICHAEL'S EARLY STRAWBERRY, the best early berry, at \$1.25 per 1,000; 25c. per 100; Apple, 4 to 5 ft., 10c. each; \$3 per 100; Apple and Peach, as above, 5 ft. up, 15c.; \$10 per 100; Kieffer Pear, 5ft., 50c., or \$5 dozen; Botton Plum, 4 to 5 ft., 25c.; \$15 per 100; Concord, 1 yr. Cottonwood Shade Tree, 5 ft. up, 25c.; Niagara and Worden Grape, 2 yr., \$5 per 100; or \$10 per 100. We can ship any time. Send money with order to insure prompt filling.

EMPORIA NURSERIES,
Emporia, Va.

Trees - Trees

I offer a fine lot of whole root trees.

APPLES, PEARS, PEACHES,
CHERRIES, PLUMS, GRAPE
VINES, RASPBERRIES, Etc.

Save agent's commission by sending your order to the nursery.

CATALOGUE FREE. All Stock Inspected and Fumigated.

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NUT NURSERY CO.

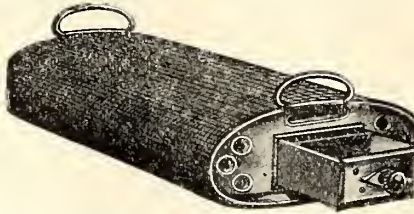
MONTICELLO FLA.

Growers of FANCY and RARE VARIETIES by grafting in all of the more important species of nuts. We have probably the FINEST STOCK OF GRAFTED PECANS in the South. Catalogue for the asking. J. F. JONES, Manager.

Mention THE SOUTHERN PLANTER in writing.

THE LEHMAN HEATERS.

The attention of our readers is invited to the ad. of Lehman Brothers, New York City, in which they are offering their well-known home, carriage, automobile, wagon, and sleigh heaters. This heater strikes us as be-



ing a most useful device, and as the cost for operating is so very low, we certainly imagine that almost every farmer in the country would readily own one.

Refer to the ad., and send to this firm for an illustrated descriptive pamphlet.

A STRIPED CAVALRY HORSE.

A REMARKABLE ARTIFICIAL ANIMAL THAT IS REVOLUTIONIZING EUROPEAN MILITARY OPERATIONS IN AFRICA.

St. Louis.—The visitor to the exhibits of German East Africa at the World's Fair is surprised to see, in the photographs of military manoeuvres taken at the principal cities of the colony, that all the officers and troopers are mounted on striped horses. On reflection one decides that these must be zebras, and is surprised to find that so wild and shy an animal has been successfully reduced into a state of such docile subservience to human utilities.

Neither supposition, however, is correct; but, rather, the two are equally true and equally false. The animals in question are "zebrulas," which are a hybrid between the horse and the zebra.

Many experiments in the cross-breeding of wild animals have been made at the Hagenbeck Zoological Gardens, in Hamburg. Many have been successful, but the zebrula is the only product thus far yielded that has already attained to great commercial importance. The first experiments in the crossing of the horse and the zebra were made about nine years ago. With experience they became more and more successful, until the zebrula, as the animal thus artificially produced was called, reached a high state of perfection, combining the docility of the horse with the special qualities of the zebra.

The German army in Africa had suffered great inconvenience from inability to acclimate the horse and mule in that part of the world and secure them from the ravages of the deadly tse-tse fly, which had destroyed tens of thousands of mules since the first attempts at the introduction of the latter.

As soon as the military officers of the German government heard of the

COW PEAS

for sale. We offer for December, January or February shipment the following varieties of COW PEAS, all 1904 Crop, and free from weevil:

CLAY, BLACK, WHIPPOORWILL, RED RIPPER, WONDERFUL, and CALICO.

At \$1.25 per bushel for prompt shipment; \$1.35 per bushel for deferred shipment; WHITES, \$1.65 per bushel all f. o. b. Hickory. 1 MALTESE DONKEY, 18 mos. old, price, \$40 f. o. b. here. Also a few pairs of CHOICE BERKSHIRE PIGS, at \$15 per pair.

HICKORY MILLING COMPANY,
Hickory, N. C.

Strawberry Plants, Trees, etc.

\$1.60 buys 1,000 nice young STRAWBERRY PLANTS, and if you are not satisfied with them, you can get your money back. Send for free catalogue. JOHN LIGHTFOOT, R. F. D. 2, Sherman Heights, Tenn.

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Write for our new illustrated and descriptive catalogue of general Nursery Stock.



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Alfalfa Seed 18 CTS. LB. \$10 BUSH'L
INOCULATED ALFALFA SOIL, 75c. 100 lbs.; \$10 a ton. RECORDED HEREFORDS, almost beef prices. J. N. SHIRLEY,
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SINGING BIRDS, FINE BRED FOWLS, CAGES, PIGEONS, DOGS, PET ANIMALS, GOLD FISH, AQUARIUMS, DOG AND BIRD FOODS, MEDICINES, ETC.

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ALL KINDS OF
LIVE WILD BIRDS AND ANIMALS

Particularly Deer, Wild Turkeys, White Squirrels, Ducks, Swans, Bob White Quail, Grey Squirrels, Bear, Baby Raccoons, Foxes Etc.

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Williams' Shaving Sticks and Tablets sold everywhere. Free trial sample for 2-cent stamp to pay postage. Write for booklet "How to Shave."

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Do you realize the importance of having a good map or plot of your land? I make a specialty of copying worn and faded farm, town lot and other maps, and to making maps and plots from metes and bounds as described in deeds. If you want old maps copied, mail to me, or if you want a map made from your deed, copy metes and bounds and mail to me.

DON'T PUT IT OFF.

After you have lost your old maps or they have become too badly torn and faded, it will be too late.

SPECIAL ATTENTION given to surveying and dividing large tracts of land in Virginia and North Carolina. My charges are: For maps, \$2 and up, according to size, and \$1 and up for calculating area. Mail me what you want done, and I will quote you price for same. DAVID T. WILLIAMS, Civil Engineer and Surveyor, 336 Main street, Danville, Va.

BAGS FOR EVERYTHING;
NEW OR SECOND-HAND;
SOLD OR RENTED.
Write for prices.
RICHMOND BAG COMPANY, Richmond, Va.

FARMS WANTED

For two Western farmers; we want Eastern Shore farms for cash rent, with privilege of buying in renting time. Farms must be well adapted for stock raising and with water front. MEYER & JEHNE, Farmville, Va.

Mention THE SOUTHERN PLANTER in writing.

Hamburg experiments, they began to watch them with close attention, and as soon as possible undertook to test the applicability of the zebra to military uses. The zebra, which is native to the country, can only be broken to the saddle or the harness by many years of skillful discipline, and even then never becomes trustworthy; but the new animal was found to be as gentle as a horse, much stronger than a mule, and entirely immune from the tse-tse.

The Imperial Government of Germany then established a breeding station in its African colony. At this station zebrulas are being bred as rapidly as possible, and already they are regularly used in the mountain batteries of the colonial service. They are being introduced, for mounting officers and men, and for draught purposes, in the other branches of the service as fast as they become available in sufficient numbers.

Several specimens of the zebra have been exhibited in the great live stock pavilion of the World's Fair, and made quite a sensation there because of their wonderful beauty. They have now been removed to the Hagenbeck collection of wild animals in another part of the grounds. Those exhibited are perfectly broken to the harness, and present so many good points that numerous persons have made inquiries with a view to acquiring similar ones for fancy driving.

Germany will probably absorb for military purposes all the available supply for several years to come; but whenever these animals have been produced in sufficiently large numbers to enable them to be placed upon the general market it is likely that they will become one of the fads of the hour, and no member of what we used to call the "smart set" will be contented to drive otherwise than behind a spanking pair of zebrulas.

Besides the cross between the horse and the zebra, a similar hybrid is displayed, which is a combination of the zebra and the donkey, and therefore a sort of zebra mule.

SURE HATCH INCUBATOR.

The Sure-Hatch Incubator Company, whose ad. will be found in another column, write us that their new machine has a great many improvements over their old machines, as well as incubators, of any other make. One of the principle features is that the water-heating device has five-sixths of its surface exposed to the direct action of the lamp heat, leaving only one-sixth of the surface exposed to the external cold. This principle will be found to be reversed in most other machines. This is only one of the many points of merit, which sold upwards of 24,000 of these machines last year. A full description will be found in the beautiful illustrated catalogue of this company, which they will mail free to those requesting it.

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The Citizens Savings and Trust Co.

OF CLEVELAND, is the largest and oldest Trust Company in Ohio, having a capital and surplus of **SIX MILLION DOLLARS** and total deposits of over **THIRTY MILLION DOLLARS**

4% Interest

is paid on Savings Accounts of ONE DOLLAR and upwards, which can be sent safely by Express or Post-office Money Order, Check on local bank, New York Draft or Currency by registered mail. Send for Booklet H.

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Write the FIRST NATIONAL BANK of RICHMOND, VIRGINIA for information concerning its certificate of deposit, so arranged that one per cent. may be collected every FOUR MONTHS through your nearest bank or store.

Our experience proves this form for savings to be the most satisfactory plan yet devised for deposits of \$100.00 or more.

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273 Acres, 6 miles from Chase City, Va.

Seventy acres cleared, balance in wood; 45 acres in timothy and herds grass. Six room dwelling, all necessary outhouses, barns, stables, etc. Well watered by creek and branches. Price \$3 per acre; one-third cash, balance to suit. Address

W. H. SAUNDERS, Chase City, Va.

Northern Virginia Farms.

Of every class, adapted to Grain, Fruit, Dairy and Blue Grass, within five to thirty miles of Washington, D. C.

No. 5.—163 acres; half timber, balance cleared; $1\frac{1}{2}$ miles from station. Good 7 room house; large barn; good water. Price, \$2,000.

No. 16.—130 acres; 20 in timber, balance cleared. Good land. In good condition. Comfortable 4 room house. Fine water. Five miles from station. Fronts on Pike. Price, \$20 per acre.

No. 22.—225 acres. Two and one-half miles from station. Forty acres timber, balance cleared. Fine land. In good condition. Good 7 room house. Large barn, etc. Price, \$20 per acre.

No. 23.—50 acres truck and fruit farm. Price, \$2,650.

No. 30.—50 acre farm in Loudoun county, $3\frac{1}{2}$ miles from rail. Price, \$1,600.

No. 33.—400 acre farm in Loudoun county. Good grain and grazing land. Price, \$7,500.

No. 36.—275 acre farm in Fairfax Fine quality of grain and grass land. Good buildings. Refined and educated citizens. Price, \$7,000.

See April and May issue of **SOUTHERN PLANTER** for description of the above farms, and write for my farm list and full information.

W. E. MILLER, - Herndon, Va.

Desirable Farm,

With Unsurpassed . . .
Educational Facilities.

201 acres in the Bright Tobacco Section of Prince Edward county, for sale, within 400 yards of old historic Hampden-Sidney College. One-half of land clear and under active cultivation. This farm is fenced in with celebrated Styron Fence with cedar pickets, and is equipped with the most modern farming implements. Ten room house, with office in yard; also stable, cow shed, good well and ice house, with a spring of mineral water near by. The macadamized road connecting Farmville and Hampden-Sidney, runs through the place. Having educated my boys, I intend to leave the county, and will sell cheap my furniture, horses, cows, farming implements and farm. Address MARY C. REYNOLDS, Hampden-Sidney, Va.

On account of poor health, I will sell my valuable

1,000 Acre Farm,

which is well adapted to stock, hay, pasture, small grain, corn and cotton; two-thirds under cultivation and in pasture; one-third in nice marketable timber, pine, poplar, oak, gum, ash, persimmon and cypress; new, modern, 9-room dwelling, 3 tenant houses, 2 new and 2 old barns, and other outbuildings, 3 miles from railroad; daily mail; one-fourth mile from church, schools, cotton gins, saw and grist mills; thrifty village; 7 miles from city; wharf on farm. If desired, will sell 75 head of Jersey and Holstein cattle. Will sell farm for half its value.

W. H. BUFFKIN,

Box 237, Elizabeth City, N. C.

ANTE-NATAL INFLUENCES—NO. 2.

"Mary Washington."

A woman is extraordinarily impressionable during the period of gestation, which is proved by the fact that if she experiences a sudden shock or fright at this time, her infant is very apt to be born deformed or weak-minded. The danger, however, is greater in the earlier stages of pregnancy and decreases towards its close. Miss Muloch's story, "A noble life," turns on an incident of this kind. She represents the hero as being born fearfully dwarfed and misshapen owing to his mother having seen her husband drown before her eyes the day before the infant was born. But herein Miss Muloch made a great blunder, remarkable in a woman of her intelligence and information. The dwarfing and deformity of the child could not have occurred at this late stage, though it might well have taken place a few months earlier, had the mother then been subjected to such a shock.

It is a well known historical fact that the timidity and cowardice of James the 1st of England, was due to the fright his mother experienced when her favorite, Rizzio, was assassinated in her presence. I read some years ago in the papers a terrible and gruesome instance of the power of ante-natal influences, combined, doubtless, with heredity ones, intensified in the transmission. A butcher's wife, during a period of pregnancy, used to watch her husband slaughtering animals—both husband and wife being probably of a peculiarly low and coarse type. The child to which she gave birth became a murderer before he was twelve years old, slaughtering one of his little companions with a sharp knife. When questioned in court as to his motive for the deed, he said "he didn't know why he did it, but he loved to stick a knife in any one."

The impressionable state of the pregnant woman has, however, its bright side, as well as its perilous one. It also readily takes on pleasant impressions. We can easily trace the effects of a woman's hearing fine music, reading fine books, mingling with charming and improving associates. In short, all the mother's pursuits, and all her states, both mental and physical, exert more or less influence on the unborn child.

But the bed rock of the child's character, I believe, is chiefly determined by the predominant traits of the father or mother or other ancestors. At all events, the child gets his tendencies this way, though, of course, he may either confirm or overcome these.

The father of the expected child has a larger or more important part to play than anyone else in creating a serene and cheerful atmosphere around the mother. The tie between husband and wife is so close (for weal or woe) that the state of mind of one is very dependent on that of the other. An

VIRGINIA .. AND .. THE PLACE ... TO ... FIND THE BEST HOMES

Where Health, Climate, Soil, Location and markets are unsurpassed. Any size, place and price to suit the buyer of a stock, truck, fruit, poultry or fish and oyster farm. The James River Valley Colonization Co. offers superior advantages to land buyers. Write for free 36 P. pamphlet giving full particulars.

W. A. PARSONS,
C. & O. Main St. Depot, - - Richmond, Va.
ESTABLISHED 1875.

..To Homeseekers..

"THE BUSINESS OF FARMING
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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.,
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Northern Virginia,

Grain, Fruit, Dairy and Blue Grass Farms of every Class within one hour of Washington, D. C.

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Farms a Specialty . . .
Catalogue on application.

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Old Virginia Farms

25, 50, 100, 500, 1,000 and 2,000 acre tracts. Some of these highly improved and convenient to schools, churches, steam and trolley lines. Send for our new catalogue. HOCKADAY, CASSELMAN & CO., Box 257, Richmond, Va.

630 ACRE FARM

Near Keysville, Va., for sale at \$4.00 per acre. This farm is well wooded and watered; about half of it is in original growth timber valued at several thousand dollars. Am anxious to sell. Correspondence invited. T. E. ROBERTS, Chase City, Va.

FARMLANDS.

The best locations, choicest lands in Virginia. Grains, Grasses, Fruit, Poultry, Dairy, Stock. For catalogue and further information, address

Real Estate Trust Co.,
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I Can Sell Your Farm....

If located in one of these Virginia counties: Prince George, Chesterfield, King William, Gloucester, New Kent, King and Queen, Hanover. Send description, stating price.
JOHN JELINEK, 1116 Pine Alley,
Braddock, Pa.

••• VIRGINIA FARMS •••
 Nice little poultry farm, 100 acres, good house and orchard, \$500.00. Blue Grass, Stock and Fruit Farms. Address PORTER & GATES, Louisa, Va.

Go South. For full particulars write A. JEFFERS, Norfolk, 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.

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Homes for ALL; Health for ALL; Happiness and Independence for ALL. ALL sizes of FARMS at corresponding prices, but ALL reasonable.

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**NEW JERSEY
Income Property**

to exchange for large farm in Virginia or North Carolina. Address W. F. HOLMES, Milburn, N. J.

VIRGINIA FARMS
 \$3 PER ACRE AND UPWARDS
 EASY PAYMENTS. CATALOGUE FREE.
 GEO. E. CRAWFORD & CO., Richmond, Va.
 Established 1876.

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Wanted. Any kind, any quantity, anywhere. I pay the freight. GEO. T. KING, Richmond, Va.

ANGORA GOATS are handsome, hardy and profitable. For large circular address E. W. COLE & CO., Big Clifty, Ky.

**ANGORA GOATS,
CHESHIRE HOGS,
PONIES for Children.**
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**Angora
Goats...**

"The Wealth of the Wilderness." A 32 page pamphlet, by Geo. Edward Allen. Price, 25c. It's worth it.

THE SOUTHERN PLANTER, Richmond, Va.

Homer Pigeons,

Bred of choicest selected stock, from Plymouth Rock Squab Co., \$1 per pair.
 C. DE BRUYN KOPS, Wake, Va.

Some Solomon Has Said:

"If you want fine stock you must breed to fine stock."

The Cedars P. & S. Farm is the home of "Richard," the great German Coach Stallion, by imported Blsmark. Also Registered Jersey Cattle, Duroc Jersey Swine, Llewellyn Setters, Beagle Hounds, Bronze Turkeys, and B. P. R. Fowls. WM. G. OWENS, Midlothian, Va.

Mention THE SOUTHERN PLANTER in writing.

unloved, unkindly treated wife cannot possibly be in a tranquil and happy state of mind. Where such a tragic state of things exists, it seems almost a misfortune that there should be any children, but if there are, you may trace in them the effects of the wife's disquiet and depression during the ante-natal period, as well as subsequently.

But even where a husband is not unkind, he is not always as thoughtful as he might be. He is constituted so differently from a woman that he does not realize the immense value she sets on a loving word or caress, nor how her heart aches when these are withheld, perhaps, from mere inadvertence or from the pressure of some outside care. When a woman is expectant of maternity, then is the time above all others that her husband should show her the most thoughtful tenderness and strive in every way to cheer and interest her, and to create around her a bright, loving and serene atmosphere. Now is the time he should keep strictly in curb any tendency to croaking, fault-finding or irritability, if he is disposed to indulge in any of these very disagreeable traits. At this time, above all others, he can help and brace up his wife by his tenderness and care which will not only be a blessing to her, but of incalculable benefit to their unborn child. And on her part, let her fill up her life with gracious deeds, kindly words and useful pursuits striving to keep all anger and bitterness out of her heart and life, and all unworthy and corroding thoughts out of her mind, trembling lest these might leave an impress on the little creature that is "bone of her bone and flesh of her flesh."

DOG NOT FOR DUCHESS.

ROXBURGHE'S AMERICAN BRIDE REBUKED BY SHEPHERD AT LEDBURGH BAZAAR. Kelso, Eng., Oct. 8.

The Duchess of Roxburgh recently had a practical little lesson in the fact that money cannot do everything.

Just as the ducal party was leaving the bazaar the duchess was attracted by an especially fine black and hazel collie in the possession of a poor old shepherd from the neighboring hills. She called him to her and asked for how much he would sell the dog. The old man replied that it was not for sale.

SHEPHERD OFFERS REBUKE.

The Duchess offered \$50, then \$100, the shepherd still shaking his head. Finally she raised the offer to \$500. The old man, who was miserably dressed in a shepherd's tartan plaid and Tam O'Shanter, drew himself up proudly and said:

"Ma leddy, gin ye were the queen hersel me and ma dowg wull ne'er be parted for siller."

The Duchess said she admired his disinterestedness, and afterwards sent him a handsome present.

—A VERY FINE—

Virginia Bred Jack,

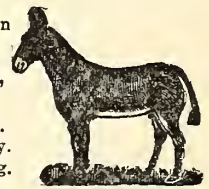
2 years old the 10th of last June; large for his age and a perfect beauty. Price \$350 cash, or will take \$100 down and note for balance, to be well secured and bearing 6 per cent interest until paid. Don't go West and pay a fabulous price when you can get better stock at home for less money. Write or come to see me. J. E. THOMASSON, Bumpass, Virginia.

KENTUCKY JACK FARM



I have now the finest and best lot of big, black, Spanish and Kentucky-bred Jacks that I ever had. In my 18 years' breeding experience, to offer to the trade. Write or come to see me. You will find my prices right. JOE E. WRIGHT, Junction City, Ky.

KNIGHT & JETTON,
 Breeders of and dealers in
**JACKS,
JENNETS, STALLIONS,**
 Durham and Hereford
 Yearlings.
 FINE JACKS a specialty.
 Send Stamp for catalog.
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**JACKS,
JENNETS,
STALLIONS.**
 Fine Jacks a specialty.
 Write for what you want.
 W. E. KNIGHT & CO., R. F. D. 5,
 Nashville, Tenn. Phone 3095L



••• COLLIE PUPS •••

By Imported Sires. Sable and white and tri-colors. Prices \$8 to \$15. Older ones correspondingly low. Book on Training, 50 cents: FREE if you buy a Collie.
 MAPLEMONT STOCK FARM, Rutland, Vermont.

Scotch Collies

Champion blood of England and America. Puppies now ready to ship. Also bitches in whelp for sale. MEYER & JEHNE, Farmville, Va.

**REGISTERED
SCOTCH COLLIE**

Pups for sale. A choice lot they are, too. Sable and white; full white points. PINSBURY LAD, Son of Finshury Herd and Ormskirk Dolly, etc., will serve a limited number of bitches. Write me for terms and pedigrees. Limited number of B. P. ROCK Cockerels for sale. ALFRED P. WHITE, JR., Parksley, Va.

A fine Registered
TROTTING STALLION FOR SALE.
 Price reasonable. Will trade for pair of drivers or for land. MEYER & JEHNE, Farmville, Va.

**Two Thoroughbred
RIDING AND DRIVING**
 horses for sale, 6 and 7 years old, 14½ hands; good cross country horses for boy or girl, and make fine buggy team. C. H. NOLTING, Medlock, Va.

White Wyandottes.

EDGEWOOD STOCK FARM.

This breed EXCLUSIVELY. We can offer you in the Edgewood strain something profitable. Better try us. Pullets and cockerels for sale. If you want PULLETS, better get orders in quick. H. B. ARBUCKLE, Maxwellton, W. Va.

TEN TRIOS

Buff Leghorns,

the best layers, beautifully marked, from strains which layed 210 eggs a year. \$5 a trio.

SUPERB BRONZE TURKEYS from the best pens of the country. Trio, \$10; hens, \$3 each. Toms, \$4 to \$5 each. Satisfaction guaranteed. A. R. VENABLE, JR., Farmville, Va.



BARRED PLYMOUTH ROCKS, PARTRIDGE COCHINS. B. B. RED GAMES, WHITE WYANDOTTES, S. C. WHITE AND BROWN LEGHORNS, S. C. RHODE ISLAND REDS, choice stock, for sale. Eggs in season.

RIVERSIDE POULTRY FARM,
J. B. Conman & Sons,
R. F. D. 19, Dayton, Va.

CHOICE LOT OF

BARRED P. ROCK and S. C. B. LEGHORN COCKERELS, Cheap to make room.

FIVE MAMMOTH BRONZE GOBBLERS. SEVERAL YOUNG CANARIES, all singers. SATISFACTION GUARANTEED.

MRS. JNO. F. PAYNE, Lairmont Dairy Farm, University Sta., Charlottesville, Va.

BROWN LEGHORNS,

White Plymouth Rocks.

Some fine cockerels and pullets for sale cheap.

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

PIEDMONT HEIGHTS FARM

YANCEY MILLS, VA.

Breeders of S. C. WHITE and BROWN LEGHORNS, WHITE WYANDOTTES, BARRED PLYMOUTH ROCKS. A few more S. C. B. Leghorn Cockerels for sale. No more females. Eggs in season. F. C. LOUHOFF, Propr.

PIT GAMES

Black Devils and Red Cubans.

Where they won, Sharon, N. Y., 4 out of 5 Blue Rock, Pa., 2 out of 3. Clarion, Pa., 5 straight. Roanoke, Va., 8 out of 9. Akron, Ia., 2 straights. EGGS, \$2 per sitting. Young trios, quail size, \$3.

THOS. W. JARMAN, Yancey Mills, Va.

PURE-BRED

Barred Plymouth Rocks.

Some fine Cockerels for sale at \$1 each. F. MAXWELL CONNER, Box 316, Richmond, Va.

A PROMINENT JUDGE'S OPINION.

Gadsden, Etowah Co., Ala.

Oct. 22, 1904.

Jas. Haas, V. S., Indianapolis, Ind.:

Yours of the 19th inst., at hand and carefully noted, I purposed to have written you ere this, but I was quite sick in spring and summer and was away from home. I had quite a time last spring with my hogs and so much so that I have not taken the interest in them as I would probably had I not lost so many of them. I want to say for your Hog Remedy that I never lost a single hog after the eating of the first dose and every one I could get to take it after taken sick, got well and made nice hogs, nor did I have any more sick hogs after the use of the Remedy. I have been feeding it to the few I have all summer, and when out shall order again. don't propose to be without it, so long as I raise hogs. Should you have any skeptical customers refer them to me and I will gladly tell them how my hogs were dying and how they quit and had no more sickness after using your Remedy.

J. H. LOVEJOY, Judge Probate Court.

There is a most remarkable strike now being carried on against the Macbeth-Evans Glass Company, the chimney makers of Pittsburg, probably not equalled by any in folly and so against the interest of their men. The company have employed a large force, many of which have been with them for twenty to thirty years, but in this time the union has fallen into the hands of the worst element, and the most odious forms of limitations put on the company's plants, and the earning capacity of the men kept down in the most amazing manner by the iron heel of "persuasion." Men in these factories have been earning from four to six dollars per day, "limited"—they are capable of earning five to nine dollars per day. The company have had all of their improvements, which are very expensive, nullified by the "limiting" process—until the limit of their forbearance has been reached—the thing has gone to full fruit—the walking delegate element has prevailed too much.

So it has gone on and on until the product is increased in cost beyond what it should be; every new facility nullified, if possible completely; the best equipped plant in the world is pulled down to the poorest; every improvement is fought over; the best workman is kept down to the level of the poorest, his freedom gone, he must not even talk to employers.

THE KEELEY INSTITUTE.

The Keeley Institute, Greensboro, N. C., sends us a very interesting pamphlet, entitled "The Right Road and the Right Track." They will be very pleased to mail a copy of it, along with other literature, to those interested in that institution.

. COCKERELS . .

of the following breeds for sale at \$1 each: Barred and White Plymouth Rocks, Black Minorcas, Black Langshans, R. C. Brown Leghorns, S. C. White and Brown Leghorns, Light Brahmas and Wyandottes; also Toulouse Geese and Pekin Ducks. J. B. JOHNSON, Clover Hill Farm, Manassas, Va.

PROFITABLE POULTRY.



45 Best Varieties. My Mammoth Bronze Turkeys are fine and ready to ship. Write me for what you want in poultry. Good stock. Low prices. Large Illustrated, Descriptive

Poultry Book, only 6c. List free. JOHN E. HEATWOLE, Harrisonburg, Va.

FINE FOWLS

BARRED, BUFF and WHITE PLYMOUTH ROCKS; SILVER, WHITE, BUFF and PARTRIDGE WYANDOTTES; BLACK MINORCAS; BLACK LANGSHANS; LIGHT BRAHMAS; BUFF and PARTRIDGE COCHINS; WHITE and BROWN LEGHORNS.

We are headquarters for stock and eggs of the above breeds, and will give satisfaction every time. OAKLAND POULTRY FARM, C. J. WARINER, Manager, Ruffin, N. C.



SILVER-LACED WYANDOTTES.

Strong, healthy, farm-raised birds, Orr's strain, fine plumage—Cockerels, \$1.25; females, \$1. Order early so as to get first choice. Satisfaction to every customer or money refunded. POLAND CHINA PIGS \$5 each.

Dr. H. H. LPE,
R. F. D. No. 2, Lexington, Va.

White Leghorn

Cockerels for sale. Exhibition or breeding stock. Address

C. G. M. FINK,

R. F. D. 2, Richmond, Va.

CHICKENS

for sale. B. P. ROCK, S. C. B. LEGHORN and WHITE WYANDOTTE. Fine pure bred stock, also M. B. Turkeys. Prices reasonable. Write Miss CLARA L. SMITH, Croxton, Caroline county, Va.

SATISFY YOURSELF

SPLENDID BARRED PLYMOUTH ROCK COCKERELS (Bradley Strain). Can be returned if don't please. L. W. WALSH, Box 194, Lynchburg, Va.

FOWLS FOR SALE.

WHITE HOLLAND TURKEYS (Mammoth Strain), \$7 per trio. EMBDEN GEESE, \$5 per pair. ROSE COMB WHITE LEGHORNS, \$4 per trio. MRS. LIZZIE DYER, Versailles, Tenn.

MAMMOTH BRONZE TURKEYS,

Greatest Winning Strain.

BARRED PLYMOUTH ROCK COCKERELS

of Hawkins, Miles, Jarman and Bradley Bros. strains. SCOTCH COLLIE from imported drivers, and bench-show winners.

LESLIE D. KLINE, Vaucluse, Va.

The following is an extract from a recent communication to *The Breeder's Gazette of Chicago*, written by Prof. W. A. Henry, Dean of the Wisconsin Agricultural Experiment Station, and probably the most eminent American authority on scientific agriculture.

One of the greatest comforts I experience in life is the thousands of friendships built up through "talks" with GAZETTE readers. Not a day passes but some one comes into my office or writes me a letter telling of the confidence he feels in the instructions I have given and the friendship he feels toward me in the pleasant relations we have established through "The Feeder's Corner" of THE GAZETTE—the farmer's greatest paper. Not only have I friends everywhere in the country made through this means, but I am continually surprised at the number of persons living in the city who regard THE GAZETTE as one of the choicest pieces of literature that comes to their homes, and who eagerly read its pages. Many of these own country property and others are longing for a home close to the soil, away from the grime, noise and turmoil of urban life. Man's natural place is on the soil, surrounded by plants and animals. The artificialities and glamor of city life have exercised their abnormal drawing power all too long. Now the times have changed and the country is about to retain a reasonable portion of the brains it produces and to draw from the city as well some of the brightest of its young men. Our agricultural colleges and our high-grade agricultural papers such as THE GAZETTE are powerful factors in this movement.

Sample copy free if you mention the Southern Planter.

ADDRESS

J. H. Sanders Publishing Co.
358 Dearborn Street, Chicago, Ill.

HOLLYBROOK FARM

BERKSHIRE PIGS

For Sale.

THREE FINE YOUNG BOARS,
five months old, \$7.50 each.
TWO YOUNG SOWS, same
age and breeding, \$7.50 each.

These pigs are from registered stock and are first-class in every respect. Our pigs have free range, with a fine stream of running water through the hog pastures, and our stock is as vigorous and healthy as possible.

Prices include crating and delivery f. o. b. cars at Richmond, Va.

HENRY W. WOOD,
P. O. Box 330. Richmond, Va.

WE NOW HAVE A CHOICE
NUMBER OF PURE-BRED

Berkshire Pigs

MINIBORYA FARM,

Box 901, Richmond, Va.

— ENGLISH —

BERKSHIRE PIGS,

for sale. A fine lot of spring farrowed Boars and Gilts. These pigs are sired by Imported **Danesfield Tailor** (76940) from the famous R. W. Hudson herd, Danesfield England. His sire is the celebrated **Manor Faithful**, which sold at the Biltmore sale of 1903 for \$615.00.

Their dams are Buttercup of Bilt more II (66611) and her get by Imported Danesfield Minting (B. B. 8564), giving strong Highclere blood. The best strains of Berkshire blood in the World is in these pigs Pedigrees with every pig.

Address, **D. CLARK,**
SNOWDEN FARM, FREDERICKSBURG, VA

FINELY-BRED

Berkshire Pig's

for sale, or will exchange for Brood Mares (work mares), or a pure-bred broken Pony of good disposition, for children to ride or drive (mare in foal preferred.)

F. M. HODGSON, West End, Va.

THE WITCHERY OF SCIENCE.
DEMONSTRATIONS WITH THERMIT ARE
GIVEN DAILY AT THE WORLD'S
FAIR GROUNDS.

St. Louis, Mo.

Thermit is a heating and welding compound in the form of a powder, the use of which is demonstrated in the Mining Gulch at the World's Fair. After a pinch of a special ignition powder has been placed upon it and lighted by a Bengal or storm match, a powerful chemical reaction takes place, within the space of half a minute, by which the temperature of the whole mass, no matter how large the quantity used, is raised to 5,400 degrees, Fahrenheit, and a pure liquid steel is given off, the rest of the compound rising to the surface in the form of aluminum slag or "corundum," in the proportion of three parts to one. The molten steel, amounting, by weight, to one half the thermit powder, will melt at once the surface of any metal to which it is applied, although the latter is entirely cold, and unite with it into one solid mass.

In this way all sorts of repairing of machinery and other metalwork can now be done readily by hand which has hitherto required the removal of the broken portion and its shipment to the foundry. An incalculable amount of time and trouble and money are saved by the device, which permits all repairing to be done on the spot almost instantaneously. It has already been extensively applied to such purposes as the closing of cracks in metallic plates or surfaces of any kind, the welding of trolley rails, of steel or wrought-iron pipes, and of broken roll-bosses.

In future naval wars it will be invaluable for annealing the spots in armor plate that have been injured by the enemy's shots. It is applicable to girders, bars, angles, shafts, turnposts, locomotive frames, and any possible section of rolled or wrought iron or steel; and it may even be used for welding cast-iron and making castings.

THE FONTAINE SAFETY SHAFT TUGS.

The Fontaine Company, Christie, Va., are advertising regularly with us a most useful harness invention under the above name. An officer of this company showed us the working of the tug and also submitted us numerous testimonials from parties using them, and we agree with him that he has not only a very useful, but a very necessary contrivance.

The main point in these tugs is that they allow considerable "play" to the girth, making the shafts rigid, however, with each expansion and contraction of the horse's body. The chances for a broken girth are slim indeed when this device is used. Look up the ad., and send for descriptive circular and testimonials.

A neat Binder for your back numbers can be had for 25 cents. Address our Business Office.

PRAIRIE STATE INCUBATORS AND BROODERS

Measure their success
by the success of users.
Twenty incubators sold first
year; 20,000 sold in 1903. Went
all over the world. Winners
of 385 first prizes. Write for
our FREE catalogue.



PRAIRIE STATE INCUBATOR CO.,
Box 425,
HOMER CITY, PA.



100 Egg Incubator,

made by George H. Stahl, for sale, or will exchange for pure-bred Poultry or Poland China Pigs. Machine as good as new; only used one season.

R. J. VAUGHAN, Dalsy, Va.



EASY MONEY

is made by installing a Hawkeye Incubator. Little cost, little care, results sure, profits large. 30 Days' Free Trial. Catalogue free. Mention this paper.—Hawkeye Incubator Co., Box 49, Newton, Iowa.



VICTOR BOOK

tells why our machine is preferred by users, and all about artificial incubation. There's pointers that may mean dollars to you. We pay freight, and guarantee goods as described or money back. The book is free. Write for it today. Postal will do.

Mammoth Bronze Turkeys

for sale by the leading turkey raiser in the South. The birds are perfect specimens of this strain. Orders placed now gets choicest birds. Demand every year exceeds supply, so order at once. Rates and terms on request. **PIEDMONT POULTRY PLACE, Miss E. CALLIE GILES, Propr., Whittle's Depot, Va.**

PURE-BRED

M. B. TURKEYS FOR SALE.

Toms, \$3.00; hens, \$2.50. Also

B. P. Rock Cockerels, \$1.00 each.

C. T. JOHNSON, - - - Beaver Dam, Va.

I have for sale a few very handsome

M. Bronze Turkeys

AND

Golden Penciled Hamburg Chickens.

Dr. T. J. WOOLDRIDGE, French Hay, Va.

A FINE LOT OF

MAMMOTH BRONZE TURKEYS

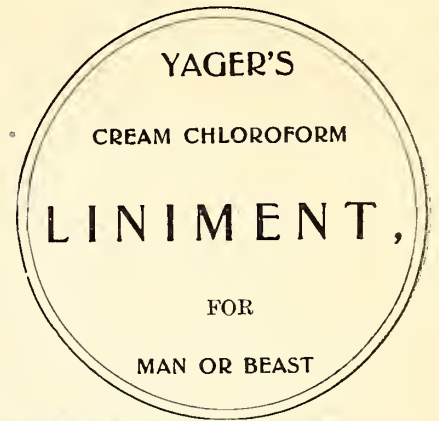
for sale. Apply to **R. E. CREE, Crozet, Va.**

FOR SALE.

Two pairs of WORKING MARES cheap, or will trade for mule colts.
MEYER & JEHNE, Farmville, Va.



THE TWO ..MARVELS..



This remedy has a world-wide reputation — established by its merit—as the greatest of all Blood Purifiers and Nerve Restorers. It is especially valuable and eminently successful in building up run-down systems, it rejuvenates and revives the worn-out man and woman, by expelling the impurities of the blood and building up the nerve tissue.

It creates sound, healthy flesh, clears the complexion, and strengthens the nerves, aids digestion, is helpful in kidney diseases, and especially valuable in cases of female weakness and kindred ailments.

These two valuable remedies are marvels because they have and are constantly effecting marvelous cures where other like remedies failed to give relief.

Mrs. L. E. Brown, of Raleigh, N. C., writes: "She can hardly explain the good that Yager's Liniment has done for her and family. She had rheumatism so bad she could hardly get around, and began using this Liniment, and soon found relief, and now would not be without it."

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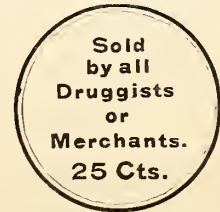
Mr. Paul Kramer, a painter, of Winchester, Pa., writes: "He has taken one bottle of Yager's Sarsaparilla, and it is building up his run-down system. Before commencing to take it he weighed 138 pounds; after the first bottle he weighed 144 pounds. He is now on the second bottle, and rapidly regaining his health."

Is a never-failing pain remover. It actually kills Pain from whatsoever might be the cause. When Yager's Liniment comes in contact with the pain, the pain must and will go.

This old family stand-by has back of it a reputation and a record of cures made, which entitles it to the broad claim of the most searching and energetic, yet soothing and efficacious, of all external applications ever offered the public. Rheumatism it relieves at once. Every family needs a bottle of Yager's Liniment, and should keep it ready for emergencies.



PREPARED BY
Gilbert Bros. & Co.,
Manufacturing Chemists,
BALTIMORE, MD.



Yager's Handy Headache Tablets--Cures Headache--10 Cents.

BERKSHIRES

ANNEFIELD HERD

Contains the

Finest Blood Lines

in England and America.

Young Stock for Sale.

Inquiries cheerfully answered.

EDW. G. BUTLER, Annefield Farms,
Berryville, Virginia.

BERKSHIRES

All my pigs sold except twenty-one (21), farrowed September 20th, 24th and 25th, 1904, from registered sows, sired by MASON OF BILTMORE II (68548). Price, \$6 each, or \$10 a pair f. o. b. delivered first week in December. None but Biltmore blood in my herd.

ROBERT HIBBERT, Charlottesville, Va.



OUR herd represents the very best strains imported

—LARGE—

English Berkshires.

Choice stock at reasonable prices. Address

Cottage Grove Farm,
P. O. Box 5, Greensboro, N. C.

PURE-BRED BERKSHIRES

for sale; 4 bred sows at \$15 each; 1 ready-for-service boar, \$15, and 6 pigs at \$3 each. M. BRONZE TURKEYS, \$5 per pair; S. C. B. Legborns, B. P. Rocks and White Wyandottes, at 75c. each if taken before Christmas. 1,000 busbels nice white corn. M. E. ANDREWS, Hurt, Pittsylvania county, Va.

GLENBURN FARM BERKSHIRES

are rich in the blood of the champions of England and America. Foundation stock has been obtained from the most noted breeders of England and America. None better. Few as good. Won first prize for best boar and best sow at Virginia State Fair. DR. J. D. KIRK, Roanoke, Va.

HAWKSLEY STOCK FARM
has some very choice

Berkshire Pigs

now ready for shipment. They are "tops" in breeding and individuality. Also M. B. TURKEYS and S. C. B. LEGHORN CHICKENS for sale.

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

VERY FINE DUROC PIGS FOR SALE

Also, handsome SETTER DOG eight months old; pure black ANGORA KITTENS.

A. F. LOCKWOOD
Orange, Va.

BIG CLEVELAND BANK PAYS 4 PER CENT. INTEREST.

The Citizens Savings & Trust Co., of Cleveland, the oldest and largest trust company in Ohio, having a capital and surplus of six million dollars, and deposits of thirty-six million dollars, has established a "Banking by Mail" department, and will pay depositors in any part of the country 4 per cent. on savings accounts of one dollar and upwards.

This move on the part of so large a financial institution will give people situated in the country and in small towns an opportunity to make deposits with one of the strong banks of the country. And, in addition, it will give depositors a chance to secure a 4 per cent. investment, about one-third more than most banks pay.

In this connection it is interesting to note that Cleveland banks were the first in the United States to pay 4 per cent. interest on savings accounts, and are still, with two or three exceptions, the only banks doing so. That they are able to pay this interest with profit is well proved by their growth and success.

The Citizens Savings & Trust Co. will send upon request an attractive booklet, giving details of their business and of their method of handling accounts by mail.

THE SUPERIOR DRILL COMPANY'S 1905 ALMANAC.

Next year's calendars and almanacs are making their appearance in great force at present. Among the most useful and interesting which we have received is the Almanac and Household Encyclopedia issued by the Superior Drill Co., Springfield, O. The calendar feature alone makes the almanac well worth having, but the other useful information, which it contains, makes it doubly so. If you will write to the above company and mention this notice, they will very cheerfully send you a copy.

A PARING KNIFE FREE.

The Page Woven Wire Fence Co., who have been advertising with us for years, send us a very novel and useful device in the shape of a paring knife, made from the No. 7 wire, which goes into all of their fences. This company will be very pleased to mail any one requesting it one of these knives, and also its handsomely illustrated fence catalogue. This firm, by the way, has a very attractive ad. in this issue, and we invite the attention of our readers to it.

MIETZ & WEISS OIL ENGINES WINNERS AT ST. LOUIS.

Mr. August Mietz, who has been advertising in our columns in season for a number of years, writes us that the Mietz & Weiss oil engine was awarded a gold medal and special diploma at the St. Louis Exposition. This same engine won a gold medal at the American Institute in '97; Paris, 1900; Pan-American, 1901; Charleston, 1902.

HIGH-CLASS Poland Chinas.

Choice 3 mos. pigs, \$5 each. 5 to 6 mo gilts, \$8 to \$10. All eligible to registry. Sunshine strain. Fine S. L. Wyandotte Cockerels, \$1 each. Satisfaction guaranteed. E. T. ROBINSON, Lexington, Va.



Registered P. Chinas Berkshire
C. Whites Large strain. All ages mated not akin. Bred sows, Service boars, Guernsey calves, Scotch Collie pups, and Poultry. Write for prices and free circular.

P. F. HAMILTON,
Cochranville, Chester Co., Pa.

ORCHARD HILL PURE-BRED POLAND CHINAS

Two fine litters of pigs now ready for sale; six beautiful young sows ready to breed, and a fine Guernsey buil calf, one month old. F. M. SMITH, JR., R. F. D., No. 4, Charlottesville, Va.

Registered Poland Chinas

1 year old Reg. P. C. SOW, bred to Reg. P. C. Boar, \$25.
3 mos. P. C. PIGS, eligible to registry, \$5 each.
SILVER LACED WYANDOTTE COCKERELS, \$1 each. Fine birds. E. T. ROBINSON, Lexington, Va.

CHOICE YEARLING POLAND CHINA

Gilts, bred to a superior SUNSHINE BOAR, for sale. Will farrow March and April. Also SUNSHINE Boar Pigs 6 mos old. Two-year old reg. FERCHERON STALLION COLT, solid black, with white spot in forehead. BRILLIANT strain, good style and well grown.

THOS. R. SMITH,
Lincoln, Loudoun county, Va.

OAK - GROVE - STOCK - FARM

offers for sale a number of fine ESSEX PIGS November delivery. Also some choice POLAND SHOATS, March, 1904, farrow, \$15 per pair. Your orders solicited. All stock as represented.

L. G. JONES, Tobaccoville, N. C.



Salt Pond Herd. DUROC JERSEYS

Home of Paul J. 21625, Also Lulu's Pet 40434. Pigs of March and May farrow for sale. Write for what you want.

S. A. WHITTAKER, Hopeside, Va.

O. I. C. PIGS FROM REG. STOCK

FOR SALE. PRICES RIGHT.

F. S. MICHIE, Charlottesville, Va.

Poland-Chinas and Chester Whites AND MAMMOTH BRONZE TURKEYS AT FARMERS PRICES.

S. M. WISECARVER, Rustburg, Va

**FASTEST
HARNESS
HORSE**

**WORLD
CHAMPION
PACER**



**IN THE
WORLD**

DAN PATCH 1:56

**VALUED AT
\$150,000**

BEAUTIFUL COLORED PICTURE OF DAN PATCH MAILED FREE

PRINTED IN SIX BRILLIANT COLORS. SIZE 24 BY 34 INCHES.

The picture we will send you is a large reproduction of the above engraving, in six colors, and is made from a photograph taken of Dan while he was going at his highest rate of speed. It is one of the finest motion photographs ever taken and is as natural and life like as if you actually saw him coming down the track. This picture shows Dan flying through the air with every foot off of the ground. The picture we will mail you is entirely free of advertising and makes a very fine horse picture for framing.

MAILED FREE WITH POSTAGE REPAID

IF YOU WRITE TO US AND ANSWER THESE 2 QUESTIONS:

- 1st.—How Much Stock Of All Kinds Do You Own?
- 2nd.—Name Paper In Which You Saw This Offer.

Address Owners at Once..INTERNATIONAL STOCK FOOD CO., Minneapolis, Minn.



Largest Stock Food Factory in the World.
Capital Paid In \$2,000,000.00.
This Engraving Shows Our New
Minneapolis Factory.
It Contains 18 Acres of Floor Space.
Also Large Factory at Toronto, Canada,
Containing 50,000 Feet of Space.

**BIG PROFIT IN HOGS, CATTLE AND HORSES
3 FEEDS FOR ONE CENT**

INTERNATIONAL STOCK FOOD Co., Minneapolis, Minn. DAVID CITY, NEBRASKA.
GENTLEMEN:—I have used your "International Stock Food" for several years for my Hogs, Cattle and Horses. No person can afford to get along without it providing he wants to save feed, have healthy, thrifty, clean good looking animals with big profit. I could hardly raise hogs without it. For pigs that are weaned it is the best that I ever used, as even the runts at once commence to grow as if by magic when fed "International Stock Food" every day.
Respectfully yours, MATT MILLER.

We Have Thousands of Similar Testimonials. We Will Pay You \$1000 If They Are Not the True Experience of Practical Feeders. Beware of Cheap and Inferior Imitations and Substitutes. Do you Desire Any Further Information about "International Stock Food", etc., or Want a Copy of Our Finely Illustrated Stock Book Containing 153 Engravings from Life That Cost Us Over \$3000 Cash and Which Contains an Extra Fine Veterinary Department? If Your Letter Requests It the Stock Book Will Be Mailed Free. Addr. 55.....INTERNATIONAL STOCK FOOD CO., Minneapolis, Minn., U. S. A.

DON'T USE ANY OF THESE PREPARATIONS

Except with the understanding that You Are To Have Your Money Refunded promptly in any case of failure. We authorize our One Hundred Thousand Dealers to sell every package or bottle on the "Spot Cash Guarantee" which is printed on every label. We positively guarantee that our "Spot Cash Guarantee" will be lived up to in every detail.

- "INTERNATIONAL STOCK FOOD"
- "INTERNATIONAL HEAVE CURE"
- "INTERNATIONAL HOOF OINTMENT"
- "INTERNATIONAL SILVER PINE HEALING OIL"
- "INTERNATIONAL POULTRY FOOD"
- "INTERNATIONAL COLIC CURE"
- "INTERNATIONAL PHENO-CHLORO"
- "INTERNATIONAL QUICK CLEANER"
- "INTERNATIONAL LOUSE KILLER"
- "INTERNATIONAL HARNESS SOAP"
- "INTERNATIONAL COMPOUND ABSORBENT"
- "INTERNATIONAL COUGH AND LUNG SYRUP"
- "INTERNATIONAL WORM POWDER"
- "INTERNATIONAL FOOT REMEDY"
- "INTERNATIONAL GALL CURE"

Prepared and Sold on a "Spot Cash Guarantee" by INTERNATIONAL STOCK FOOD CO., Minneapolis, Minn.

BETTER READ THIS

As it is positively the best
Shorthorn Offering
 you ever ran across.



My stock won prizes at the Hagerstown Fair, the greatest Maryland show.

I am offering Cows and Bull Calves at ridiculously low prices, because I will sell them when I see only a small profit. I can raise a Shorthorn almost as cheaply as a scrub can be raised. Remember I have as well-bred stuff in Shorthorns as will be found in the United States, and will not be undersold, all things considered.

Percherons

of the best type and blood, as well as

Berkshire Hoas

always on hand at low figures.

COME AND INSPECT MY STOCK.

JOHN F. LEWIS,
 LYNNWOOD STOCK FARM, LYNNWOOD, VA

REGISTERED CATTLE.

Short Horns. Polled Durhams. Red Polls.

Who wants a few good Bulls, Heifers or Cows? Choice herd, bred and reared in the mountains of Western Texas, below the fever line. Healthy, hardy stock. Write us your wants. Or will sell entire Herd of three hundred head, and rent fine ranch reasonably. Splendid Opportunity.

LANDA CATTLE COMPANY,
 New Braunfels, Texas.
 Breeders of Registered Cattle Only.



COOK'S CREEK HERD SCOTCH - TOPPED SHORTHORNS...

Herd Headed by Governor Tyler, 1884, 1st prize aged bull at Radford Fair, Young Bulls and heifers for sale. Inspection and correspondence invited.

HEATWOLE & SUTER, Dale Enterprise, Va

REGISTERED SHORT HORN BULL,

"PLAIN DEALING," for sale to avoid inbreeding. Bred by Cottrell Bros., Hoosick Falls, N. Y., and is of well established milking strain. Solid deep red and of fine form and finish. Weight, 1550 pounds. Price, \$75.

JOS. WILMER, Rapidan, Va.

WITH THE ADVERTISERS.

A new advertiser in this issue, is Mr. P. H. Gold, Winchester, Va. He is offering some finely bred Berkshires and a herd boar.

The Breeders' Gazette has a full page ad elsewhere in this number. All stockmen should take this paper.

J. B. Cretors is offering a storm apron and hood. Look up his advertisement.

The Star Pea Machine is advertising a Pea Huller which is guaranteed to give satisfaction.

Meyer & Jehne have several ads in this issue which are sure to interest scores of our readers.

Charles Veirs is closing out his Shorthorns. Look up his offering.

Clairmont Farm is offering bargains in poultry and turkeys.

A number of very desirable farms are offered for sale in this issue.

Shorthorns, Percherons, and Berkshires are advertised by John F. Lewis.

The Bateman Mfg. Co. maker of the celebrated "Iron Age" Implements and tools, start the season's advertising with this issue.

The Hook-Hardie Co. is offering its Spray Pumps in an attractive ad on another page.

The Landa Cattle Co. would like to communicate with stockmen wanting some pure-bred bulls.

Thoroughly responsible agents and solicitors are wanted by Mr. J. B. Crabtree.

A splendid Majiolini Red Poll Bull is offered by Mr. H. B. Arbuckle. Look up the ad.

Mr. Ed. S. Schmid would like to mail his beautiful catalogue of all kinds of fanciers stock and poultry to interested parties.

Angora Goats, Cheshire Hogs and Ponies are advertised by Dr. Wm. C. Johnson, Frederick, Md. Send for a circular.

Dan Patch, 1.56 broke another record on Nov. 17th, at Oklahoma City by going the mile in 2.03 on a half mile track. A full page ad of him will be found in this issue. Refer to the ad and get his picture.

The Columbia Incubator Co. is among the new advertisers in this issue. Look up the ad.

The Electric Wheel Co. has a couple of ads on another page.

The Cyppers Incubator Co. starts the season's advertising with this issue. Send for its new catalogue.

The Virginia-Carolina Chemical Co. have an attractive ad in another column.

The German Kali Works resume their advertising in this issue.

A charitable young lady, visiting a sick woman, inquired, with a view to further relief, as to her family. She asked: "Is your husband kind to you?" "Oh, yes, Miss," was the instant response, "he's kind—very kind. Indeed, you might say he's more like a friend than a husband."

REGISTERED

SHORTHORNS

A few choice BULL CALVES 6 months old for sale at reasonable prices. Write me for further information. I. S. EBERLY, Glen dale, Va.

WILLOW GLEN

Short = Horns.

Special offering of two and three year old heifers with calves at side. Also nine head of splendid young bulls. Prices low if sold at once. Inspection invited. DR. D. M. KIPPS, Front Royal, Va.

Springwood Short-Horns

Young stock for sale, sired by Royal Chief. No. 185432; he by Imported Royal Stamp, Champion Bull at Ohio State Fair this year. Spring and fall Poland China Pigs and shoats; sired by Coler's Perfection. I will sell this hog at a bargain. Call on or write WM. T. THRASHER, Springwood, Va.

REGISTERED

SHORTHORNS.

Having concluded to close out my herd, I offer for sale, 6 LARGE COWS and CALVES from Imp. Josephine Marquis of Bute, 116453; also a nice lot of heifers. CHAS. VEIRS, Rockville, Md.

ELLERSLIE FARM

Thoroughbred Horses

AND SHORTHORN CATTLE, Pure Southdown Sheep and Berkshire Pigs.

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

OAK-HILL FARM

SADDLE HORSES, JERSEY AND ABERDEEN ANGUS CAT- TLE, BERKSHIRE, POLAND CHINA, RED JERSEY, and TAM- WORTH HOGS, FOR SALE

WRITE FOR PRICES.

Shipping point Oak-Hill, Va., (Station on farm) on D. & W. Ry. 15 miles west of Danville, Va.

SAM'L HAIRSTON,
 Wenonda, Va.

PLEASANT VALLEY STOCK FARM

Shorthorn

calves from fine milking stock.

Yorkshire Pigs

of prolific breed.

JAMES M. HOGE, Hamilton, Va.

COTTAGE VALLEY STOCK FARM.

FINE STOCK FOR SALE LOW

7-8 and 15-16 GRADE ANGUS BULLS and HEIFERS from 6 months to 2 years old. One Bull Calf, half Angus and half Short-Horn. Fine family Milk Cows fresh, young and gentle. One pair splendid 1,200-pound Bay Mares 6 years old, first-class all-round farm teams, and very good roadsters. One fine SADDLE MARE, 4 years old, very handsome and stylish, every gait, Hackney and Hambletonian. One beautiful DRIVING MARE, coming 4 years old, three-fourths Hackney, one-fourth Hambletonian. These Mares are well bred and nice enough for any one. Pure-bred Poland-China Pigs at \$5 each. Pure-bred Llewellyn Setter Pups, \$5 each. Silver-Laced Wyandotte Cockerels and Pullets at \$1 each.

W. M. WATKINS & SONS, Saxe, Va.

ANGUS HERD BULL FOR SALE

To prevent inbreeding, we offer our herd bull, PAGAN, 26416; sire, BARONET NOSE-GAY, 13869; dam, PRINCESS ERICA OF LINN, 10369. Pagan is 7 years old, weight, 2,000 pounds, vigorous, active, perfectly broken, an excellent sire. Address ROSE DALE STOCK FARM, Jeffersonston, Va.

MONTEBELLO HERD ABERDEEN=ANGUS CATTLE.

FOR SALE—Registered Bull calves from 3 months old, up.

L. H. GRAY, Orange, Va.

... REGISTERED ...

ANGUS BULLS, BERKSHIRE PIGS, of Biltmore Strains. J. P THOMPSON, Orange Va.

To reduce my herd of

JERSEYS

I will sell 4 or 5 first class family cows, now in calf, at very low prices; also 2 Reg.

BULL CALVES,

4 to 6 mos. old. One is a son of RIOTA'S PRIMA DONNA, tested 17½ lbs. butter in 7 days, the other, a son of LADY MADELINE, who gave 200 lbs. more milk per month than her own weight. Price, \$50 each; also 10

JERSEY HEIFERS,

from 6 to 15 mos. old, from my very best cows, and no better in Virginia, for \$30 each. These cattle are in fine condition, kindly handled, and will make valuable animals. A. R. VENABLE, JR., Manager, Farmville, Va.

A neat Binder for your back numbers can be had for 25 cents. Address our Business Office.

MAGAZINES.

It is impossible even to summarize in a single paragraph the many and varied attractions which The Youth's Companion announces for the coming year.

A series of articles planned to interest especially the forty-five millions of Americans who look directly to the soil for their subsistence will treat of "New Fields for Young Farmers," "The Sanitation of the Farm," "The Future of American Cotton," "How Women Make Money on the Farm," etc.

Seven serial stories and 250 short stories by the most talented and popular American writers of fiction will form part of the contents of the new volume for 1905.

Full Illustrated Announcement describing the principal features of The Companion's new volume for 1905 will be sent, with sample copies of the paper, to any address free.

The new subscriber who sends \$1.75 now for a year's subscription to The Companion receives free all the issues of The Companion for the remaining weeks of 1904, also The Companion "Carnations" Calendar for 1905, lithographed in twelve colors and gold. THE YOUTH'S COMPANION, 144 Berkeley street, Boston, Mass.

There is always one by which the rest are measured. In the magazine world that one has always been and is to-day The Century. Ask writers where their best productions are first offered; ask editors which magazine they would rather conduct; ask public men where articles carry most influence; ask artists where they would prefer to be represented; ask the public what magazine is the first choice among people of real influence, and the answer to each question is the same: "The Century." Are you going to have the best in 1905?

The new volume of The Century begins with November. Yearly subscription \$4. A year's subscription and the twelve numbers of the preceding year—complete serials, novels, stories, Jack London's "The Sea-Wolf," Dr. Mitchell's "Youth of Washington," etc., etc.—back numbers and subscription for coming year, \$5. THE CENTURY CO., Union Square, New York.

The December *Delineator*, with its message of good cheer and helpfulness, will be welcomed in every home. The fashion pages are unusually attractive, illustrating and describing the very latest modes in a way to make their construction during the busy festive season a pleasure instead of a task, and the literary and pictorial features are of rare excellence. A selection of Love Songs from the Wagner Operas, rendered into English by Richard de Gallienne and beautifully illustrated in colors by J. C. Leyendecker, occupies a prominent place, and a chapter

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 4 to 6 months old, \$25; Heifers, same age, \$35. POLAND CHINA PIGS, \$5 each. Send check and get what you want.

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

REGISTERED JERSEY BULL.

The magnificent 2 year old REG. JERSEY BULL, "Joe K." Finest blood, kind and without a blemish. Also pure bred BERKSHIRE PIGS 1 and 2 mos. old; fine as silk, and sired by the grand registered boar, "Brandywine." Also two pure bred 8 mos. old Berkshire brood sows, supposed to be with pig by the boar "Brandywine." Prices reasonable. Satisfaction guaranteed or money refunded. Address JAMES N. SAUNDERS, Brandywine, Caroline county, Va.

THOROUGH-BRED...

Berkshire Boars, Dorset Buck Lambs, Jersey Bull Calves.

All stock in best of condition and guaranteed as represented.

F. T. ENGLISH, Centreville, Md.

THE WOODSIDE HERD.

FOR SALE; 2 grandly bred

JERSEY BULLS,

1 year old. For prices and description, address,

DAVID ROBERTS, Moorestown, N. J.

EVERGREEN DAIRY AND STOCK FARM OFFERS FOR SALE

REGISTERED JERSEY BULL

2½-year old, son of "Riots Prima Donna," who tested 17½ lbs. of butter in 7 days.

BROWN LEGHORN CHICKENS, 65 cents each; healthy and high bred birds.

W. B. GATES, Rice Depot, Va.

FOR SALE, TWO CROSS-BRED

Jersey-Alderney

Cows; one fresh, other milking now. Pedigree furnished. Bargains. M. R. WALLACE, 24 N. Laurel street, Richmond, Va.

Woodland Dorsets.

At 6 great State Fairs this year, we won every first, but two. At St. Louis, we won second on Ewe Lamb and third on Ram Lamb, against the strongest Dorset Show ever seen in America.

J. E. WING & Bros., Mechanicsburg, O.

DORSETS AND HEREFORDS

H. ARMSTRONG, Lantz Mills, Va.

Mention THE SOUTHERN PLANTER in writing.

in the composers' Series relating the Romance of Wagner and Cosima, is an interesting supplement to the lyrics. A very clever paper entitled, "The Court Circles of the Republic," describes some unique phases of Washington social life is from an unnamed contributor, who is said to write from the inner circles of society. There are short stories from the pens of F. Hopkinson Smith, Robert Grant, Alice Brown, Mary Stewart Cutting and Elmore Elliott Peake, and such interesting writers as Julia Magruder, L. Frank Baum, and Grace MacGowan Cooke hold the attention of the children. Many Christmas suggestions are given in needlework and the Cookery pages are redolent of the Christmas feast. In addition there are the regular departments of the magazine, with many special articles on topics relating to woman's interests within and without the home.


The *Review of Reviews* for December presents a series of contributed articles of unusual variety and interest. Mr. Walter Wellman writes on "The United States and the World's Peace Movement." Mr. Winthrop L. Marvin describes the work of the Merchant Marine Commission, appointed during the last session of Congress to investigate American shipping conditions in our great ports. The four "men of the month" chosen as the subjects for character sketches are Chief Engineer William Barclay Parsons, of the New York Rapid Transit Commission; President David Rowland Francis, of the Louisiana Purchase Exposition; Chairman George B. Cortelyou, of the Republican National Committee, and Governor-elect William L. Douglas, of Massachusetts. Mr. William C. Edgar gives an interesting account of the Ojibway Indians' play of "Hiawatha," as presented at Desbarats, Ontario, on the shores of Georgian Bay; the article is illustrated from photographs of the Indian players in costume. Mr. Clarence H. Pee tells the story of the remarkable rejuvenation of rural North Carolina, illustrating his article with pictures showing the great advance in the educational appliances provided by the State for both whites and blacks. "The Hawaiian Sugar Product" is the title of a valuable illustrated article by Lewis R. Freeman. Mr. W. J. Henderson, the well-known musical critic, contributes a forecast of the musical season in New York, just opening, with portraits of the conductors and several of the most famous stars. Mr. H. M. Suter outlines the work of the American Forestry Congress to be held at Washington in January. Mr. Ernest Knauff contributes an article entitled "Modern Picture-Book Children," in which he sets forth the characteristics of the new group of illustrators of childhood who are now claiming so much attention in the illustrated magazines. There is a brief

IRON AGE

Larger Crops at Less Cost

is always the result of using Iron Age Implementations. Being built to get the greatest possible results for labor expended, they do farm and garden work better and quicker than any tool made. A new Iron Age Implementation, and one that is very successful is No. 19—Wheel Plow and Cultivator. It is simple, strong and light running. Combines the best wheel plow and cultivator ever produced. Like all other Iron Age Implementations, it's guaranteed to give entire satisfaction.

You can make more money, save more, and lessen your work, if you send for the Iron Age Book for 1905. It describes Seed Drills, Wheel Hoes, Riding Cultivators, Potato Planters, Horse Hoes and Cultivators, gives you the prices and all details. The book is free. Write at once.



No. 19 Iron Age Wheel Plow and Cultivator.

BATEMAN MFG. CO.,
Grenloch, N. J.
BOX 167.

FOREST HOME FARM

Produces Four Crops—viz.,

**Jerseys, Jersey Cream,
Berkshires, and Berkshire Sausage,**

In producing Cream we have Skim Milk by the hundreds of gallons to feed our Hogs. Then we buy Germ Oil Meal by the car load. Now you know why our Hogs grow so rapidly, and are so in demand. Write

FOREST HOME FARM, Purcellville, Va.

FOR SALE.

10 Registered Jersey Heifers

Due to calve this fall and winter.

Several Registered HEIFER CALVES, four months old, at \$25 each, if taken this month, and a few BULL CALVES at farmers' prices.

Also several GUERNSEY BULL CALVES, BERKSHIRE BOARS, SOWS and PIGS.

Two grand guard Dogs (Danes), 6 months old, at \$20 each.

M. B. ROWE & CO., Fredericksburg, Va.

∴ SOME VERY FINE ∴

RED POLLED

Calves, entitled to registry, for sale; also a few very good

Poland China Pigs

whose breeding cannot be excelled. Only one SHETLAND PONY for sale now. ARROWHEAD STOCK FARM, SAM'L B. WOODS, Propr., Charlottesville, Va.

IS YOUR FARM FOR SALE?

R. B. CHAFFIN & CO., (INC.) Richmond, Virginia.

EDGEWOOD STOCK FARM.

Red Poll Bull Calf.

Majolini is greatest bull of breed. This calf carries his blood. His dam also traces back to Rufus. Can't you trust this blood? Calf now ready. You men in Virginia order quick if you want to get a promising youngster. H. B. ARBUCKLE, Maxwelton, W. Va.

If so, list it with us. No sale, no charge. Largest list of farms for sale in Virginia. Write for Free Catalogue

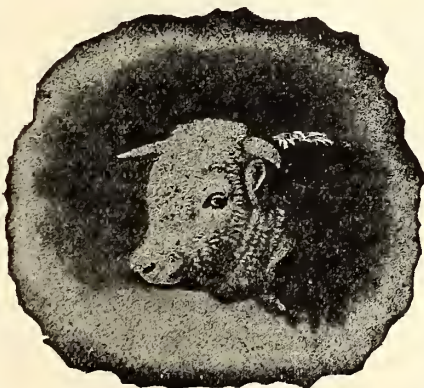
Castalia Herefords

A competent judge of International experience, who has recently inspected the CASTALIA HEREFORDS, pronounces of them:

"You have made a convincing demonstration here of two things; of the value of your judgment in combining blood lines and your capacity to make steady progress toward the ideal that you hold, and you have demonstrated the superior fitness of Hereford cattle for Virginia grass, and of Virginia grass for Hereford cattle."

This opinion, unsolicited, surprise, and brought the Olive great deep satisfaction to years to found a Hereford Virginie," second to none quality and breeding, are readers to my advertisements of the SOUTHERN

I have recently sold yearling bulls to Essex and Henrico Counties, and am now offering prices and information at any time in the past



came to me as a complete surprise and a Branch of victory and I know that my efforts of Breeding Herd in "Ole in the United States in bearing fruit. I refer to my advertisements in the last three PLANTER pp. 633, 703, 763. I have recently sold yearling bulls to Essex and Henrico Counties, and am now offering prices and information at any time in the past receiving more inquiries for about Hereford cattle than two years.

Every farmer who owns cattle WANTS Herefords, and NOW is the time to buy; cattle have reached low tide, and cattle men all over the country expect a gradual rise in prices of both pure bred breeding stock and beef stock. The Hereford bulls crossed on the native cows of Virginia make the best veals, the best stockers and feeders and the best butchers' stock on the market. I have some yearling bulls which are beauties and at rock bottom prices. ALSO FOR SALE

Bull Calves dropped this fall, and Breeding Cows in calf. A few Cows with calf at foot. Call and make your selection or write.

MURRAY BOOCOCK,
 Keswick, = = = = = Virginia.

account of the trials of the New York Central's electric locomotive at Schenectady last month, with two very interesting illustrations from photographs. "What Port Arthur means to Japan" is clearly set forth by Adachi Kinnosuke, with a map of Port Arthur and its surrounding defenses. Fifteen pages in this number are devoted to the season's new books, including portraits of many of the authors and other illustrations. In the editorial department, "The Progress of the World," there is a full discussion of the results of the elections, of the North Sea episode and its bearings on Anglo-Russian relations, of the latest developments in the far East, and various other matters of international interest.

Richardson's charming pictures in color, illustrating that jolly new serial, "Queen Zixi of IX," by Frank Baum, are a notable feature of the December *St. Nicholas*, as worthy a Christmas stocking number as any child could wish. There are two colored insets this month, besides several illustrations on the text pages of "Queen Zixi of IX;" and the pretty fairy story continues to tempt the older members of the family to monopolize the magazine till "Queen Zixi" at least is read.

Two other serials now running in *St. Nicholas* are probably the most notable and valuable that have ever been offered by a periodical for young people. "How to Study Pictures," by Charles H. Caffin; and "The Practical Boy," by Joseph H. Adams, are notable and valuable. There are reproductions this month of Albrecht Durer's "The Adoration of the Magi" and Leonardo da Vinci's "Virgin of the Rocks," and of Wohlgemuth's "The Death of the Virgin" and Raphael's "Madonna Degli Ansidei," to illustrate Mr. Caffin's discussion of these artists and their work. Mr. Adams tells this month, so clearly and helpfully that any handy boy can work out the suggestions, how to fit up a boy's room, book-tower, table, desk, chairs, bed, even to the wall decoration. The illustrations offer hints also for those interested in novel and artistic furniture.

"Little Pete," the story of a carrier pigeon that traveled eight thousand miles to reach home, is a true tale, its author having owned Pete's grandfather and being well acquainted with the wonderful ways of Pete and other carrier pigeons.

Strikingly appropriate to the election season is the novelette in the Christmas number of *Lippincott's Magazine*. Its author is Alden March, one of the Editors of the *Philadelphia Press*, and its title is "A Darling Traitor." In it there is a deft commingling of love and politics and a deep sub-stratum of real humor. The scene at dinner between the priest and a crooked politician is intensely dra-

For Home or Carriage Use

LEHMAN HEATERS



are being used not alone in carriages, autos, wagons and sleighs, but are highly recommended by physicians for home use, and are being used extensively.

They burn Lehman Coal which costs only 2 cents for a day's continuous heat, and from which there is no smoke nor danger of fire.

250,000 Lehman Heaters are in regular use by horsemen, physicians, farmers, etc., who highly recommend them.

Beware of imitations. Remember it must be a LEHMAN to be the Standard and BEST. Refuse substitutes.

They are sold by leading dealers everywhere. Send for our illustrated booklet telling more about them.

LEHMAN BROS., Mfrs.,
10 Bond St.,
NEW YORK.

J. W. ERRINGER,
Gen'l West Sales Agent
45 E. Congress St.
CHICAGO, ILL.



250,000 IN USE.

The Grove Stock Farm

I OFFER AT RIGHT PRICES THE FOLLOWING STOCK:

- One yearling **HOLSTEIN-FRIESIAN BULL**,
- Seven **BULL CALVES** (same breed), 2 to 6 months old
(These calves are from heavy milkers),
- Six **BERKSHIRE SOWS** (1 year old),
- Ten **BERKSHIRE SOWS** (5 months old).

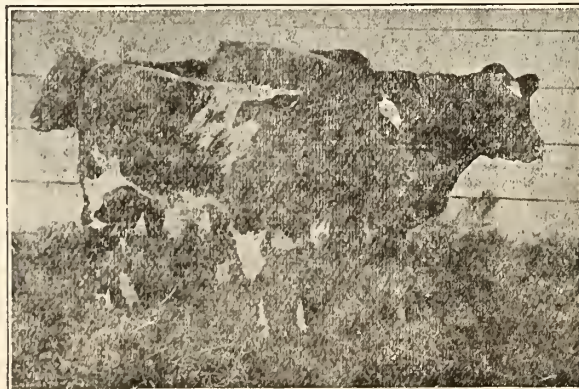
All of the above will be registered and transferred to the buyer.

N. & W. and Southern Railways.

T. O. SANDY, Burkeville, Va.

JNO. S. FUNK, Glen Farm.

Importer and Breeder of **POLLED DURHAM CATTLE.**



Reds and roans. Can furnish bull calves or cows and helpers in car lots. **SOUTHDOWN SHEEP, POLAND CHINA HOGS.** R. F. D. 7, Harrisonburg, Va.

Deep Creek, Va.,
October 8, 1904.

JOHN S. FUNK, Esq.:
Dear Sir,—I received the calf on the 6th, safe and sound. Every one that has seen him says he is the finest and largest for his age that they ever saw. I would like for you to have him registered for me when he is old enough. I am highly pleased with pig and calf both.
Yours truly,
W. T. CULPEPPER.

When corresponding with our advertisers always mention the
Southern Planter.

— MORVEN PARK —

GUERNSEYS

The Property of WESTMORELAND DAVIS, Esq.

LARGE HERD OF FASHIONABLY BRED REGISTERED ANIMALS, INCLUDING COWS IN THE ADVANCED REGISTRY. HERD HEADED BY THE BRILLIANTLY BRED IMPORTED BULL,

TOP NOTCH No. 9023.

The Dam of this Bull, Imported ITCHEN BEDA, took 1st prize at the "Park Royal" Show in England in 1902, and her daughter ITCHEN BEDA II, took the same honors in 1904: further, Imported TOP NOTCH'S Dam, ITCHEN BEDA, entered the official advanced Registry of the American Guernsey Cattle Club this year with a record FOR THE YEAR of 10642.10 lbs. of milk; 548.70 lbs. of butter fat, equivalent to 640.15 lbs. of butter.

The Pedigree of Imported TOP NOTCH, with some of the achievements and prizes won in the direct line of his ancestry, are given below:

TOP NOTCH, 9023, bred by Sir Henry Tichborne, of England, was sired by Rival, 1343 E, and is out of imp. Itchen Beda, 15627. His father, Rival, by Rival of Mont March, 1164, P. S., out of Clatford Gentle, 4746, E. (first prize English Royal, B. & W. E. and Royal C., 1900). His mother, Itchen Beda, 15627 (see record above); she by Loyal of Hunguets, 978, P. S. (first prize, 1896, second prize, 1898); sire of Itchen Lady, Hayes Lily du Prael. His extended pedigree is impossible in this space, but will be furnished if desired. It goes back to winners of the Queen's prizes, as well as to members of her late Majesty's Prize Herd.

MORVEN PARK is situated in Loudoun County, Virginia, and because of its climate and soil is peculiarly adapted to the production of the highest class of an mal life, and particularly to supply the needs of Southern breeders of pedigreed cattle.

REGISTERED and TUBERCULIN TESTED animals for sale, including a fine lot of BULL CALVES at reasonable prices.

For further particulars, Address

**LIVE STOCK DEPARTMENT, MORVEN PARK,
PLEESBURG, LOUDOUN CO., VA.**

matic, while the character work—from freckled-faced, devil-may-care Joe, the office boy, to the irresistible Edith North—is undeniably strong. It is predicted that "A Darling Traitor" will appear on the stage before long.

General Charles King leads the shorter fiction with one of his inimitable Indian war stories. This is called "The Boy that Couldn't Stand Fire," and it begets the thrill which goes with a tale of valor that rings true. A charming Christmas story by Phoebe Lyde is "The Abbot of Bon-Accord." Its fanciful theme and delicate treatment adapt themselves to the holidays. Baroness von Hutten contributes one of her delightful "According to Lady Moyle" stories. This time it is "About Mademoiselle Ziska," a snake-charmer, who falls victim to the fascinations of Lady Moyle's butler and almost causes his downfall. "A Crustacean Courtship," by Mabel Nelson Thurston, is a clever tale of country life in which love and lobsters take part. Arthur Hendrick Vandenburg has a special gift for the writing of entertaining "Trust" fiction. In "Barlow and the Octopus" he tells how a young fellow lacking business experience but possessing considerable acumen, comes out ahead in a deal with the "Gas-Meter Combine." "Billets-Doux," another Christmas story, is by Thomas Cobb. In this some love-letters-in-wrong-hands are involved and make a breezy tale. It is the time of year when a "bargain" seems specially appealing." So it does to the girl in Clinton Dangerfield's story entitled "The Shears of Destiny." In this case a rich husband is part of her bargain.

A momentous paper on "The Regular and the Savage" is written by a Lieutenant of the United States Army, in the Philippines. This is so radical as to be likely to provoke both confirmation and denial.

Harper's Illustrated Weekly is still one of the best of the illustrated papers both in its pictorial and literary matter. The opening article by the Editor is always full of matter worthy of careful reading and suggestive of thoughts on subjects of present moment.

The following is a mere suggestion of the contents of the November *Woman's Home Companion*: "Election-Night in a Great Newspaper Office," by Hartley Davis; "The Rise and Fall of Sully, King of Cotton," by Henry Irving Dodge; "A Visit to Sod-House Land," by Charles M. Harger; "Saint Patrick's Purgatory," by Seumas MacManus; "The Strike and the Housewife," by Henry Harrison Lewis; "The College Girl's Memory-Book," by Martha Cobb Sanford; "The Girl and the Game," by Ralph Henry Barbour; "The King of Diamonds," by Louis Tracy; "How Wild Animals Prepare for Winter," by Ernest Har-

ALL EMERGENCIES IN THE FAMILY OR ON THE FARM FOR MAN OR BEAST



SLOAN'S LINIMENT

**KILLS PAIN ALL
KILLS GERMS DEALERS**

YORKSHIRE PIGS

Our spring pigs have all been sold and we are now booking orders for

FALL PIGS

for November and December delivery. The great display of Large Yorkshires at the recent Live Stock Show at the World's Fair, shows the growing popularity of this profitable bacon breed.

Also Jersey Bulls and Heifers,
from our high testing herd.

BOWMONT FARMS. Salem, Va.



POLAND CHINAS

I am selling them fast, but still have a few choice pigs boars and bred sows left that I now offer at reduced prices in order to reduce my stock before Feb. and March litters arrive. I do believe there is a better bred herd of Poland Chinas in Virginia than mine, and their individuality is so good that I am willing to ship, subject to return, at my expense if not exactly as represented.

My prices are lower than ever, for this month. Write for prices and testimonials.

J. P. DURRETT, Birdwood, Albemarle Co., Va.

50 POLAND-CHINA AND TAMWORTH

pigs, 3 and 4 months old, eligible to registration \$6.50 w ll buy the best of them. The first orders will get the pick of the lot.

A few nice boars ready for service, also for sale.

J. C. GRAVES, Barboursville, Orange Co., Va.

old Baynes; "Correct Clothes for School-Girls," "Frocks for Little Folks" and "Smart Fashions for Early Winter," by Grace Margaret Gould. It is a valuable, up-to-date, progressive magazine. Published by The Crowell Publishing Company, Springfield, O.; one dollar a year; ten cents a copy.

The *Cosmopolitan* is especially noteworthy for its illustrations which are beautifully executed.

Caller—I never saw two children look so much alike. How does your mother tell you apart?

One of the Twins—She finds out by spankin' us. Dick cries louder'n I do.

REPORTS.

U. S. Department of Agriculture, Washington, D. C. Annual Report of the Secretary of Agriculture, 1904.

The Secretary of Agriculture has transmitted his Eighth Annual Report to the President.

In opening his report the Secretary enumerates some of the more important features of the year's work. Among them are extensive co-operation with agricultural stations; the taking of preliminary steps to conduct feeding and breeding experiments; the war waged against the cotton boll weevil and against cattle mange; plans for education of engineers in road building; the production of a hardy orange, a hybrid of the Florida orange and the Japanese trifoliata; valuable research in successful shipping of fruit abroad; the value of nitrogen-fixing bacteria; successful introduction of plants suited to light rainfall areas; establishment of pure food standards; the extension of agricultural education in primary and secondary schools; the extension of instruction to our island possessions to enable them to supply the country with \$200,000,000 worth of domestic products, now imported from abroad.

He then proceeds to discuss the place of agriculture in the country's industrial life.

AGRICULTURE AS A SOURCE OF NATIONAL WEALTH.

The corn crop of 1904 yields a farm value greater than ever before. The farmers could from the proceeds of this single crop pay the National debt, the interest thereon for one year, and still have enough left to pay a considerable portion of the Government's yearly expenses. The cotton crop, valued for lint and seed at 600 millions, comes second, while hay and wheat contend for the third place. Combined, these two crops will about equal in value the corn crop. Notwithstanding the wheat crop shows a lower production than any year since 1900, the farm value is the highest since 1881. Potatoes and barley reached their highest production in 1904; save in 1902 the oat crop was

'Twas the night before Christmas



"I'll give my boy a

STEVENS

I know he would rather have that than anything else in the world, and it's a good thing for any boy to have—it will quicken his eye and judgment, and strengthen his nerve."



"It's about time Dad got a

STEVENS

if only for use in protecting our stock, and for the feeling of safety it gives. It generally happens that you feel the need of a gun most when you haven't one, and as it's not much use closing the stable door after the horse is stolen, I guess I'll buy him one now."



"Sister always did want a

STEVENS

and why shouldn't she have one—it's fine sport, good exercise, and rounds out and strengthens a girl's character and nerve. The girl who knows how to handle a gun is the girl with the quick eye, elastic step and easy grace, with her wits always about her."



"Uncle Joe will be delighted—it's a

STEVENS

He's a man that has handled a gun from boyhood. When he first tried a 'Stevens' he said: 'might as well stop right here—couldn't get a better fire stick than this if I tried 'till doomsday.'

A great book of 140 pages of interesting articles on hunting, target shooting, etc., FREE. Enclose 4c. to cover postage.
STEVENS ARMS AND TOOL CO.,
 350 Pine Street, Chicopee Falls, Mass., U. S. A.

A surprise for everybody—a "STEVENS"

ANGORA BUCKS.

Now is the time for your Angora Bucks.

5 two-year old, 5 three-year old, and 15 Kid Bucks, all registered or high-grade ANGORAS. Can spare a very few ANGOA DOES with these Bucks if wanted. This lot is sired by our fine reg. California and Kansas Bucks. You need new blood in your flocks. Don't let your Goats degenerate, but get a new buck.

DIAMOND V RANCH, - - - - - Rock Castle, Va.

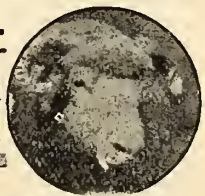
EDGEWOOD STOCK FARM.

DORSETS.

Our FALL LAMBS are here, friends, and they are crackerjacks. Our Imported Fwes started lambing October 15th. Betier give us your orders now. Last year many of you were too late.

J. D. and H. B. ARBUCKLE, Maxwelton, Greenbrier, Co., W. Va.

When corresponding with our advertisers always mention the *Southern Planter*.



never so large by 60 million bushels. The present crop of rice promises a yield of 900 million pounds—300 million more than ever before.

Horses and mules reach the highest point this year, with an average value exceeding 1.354 million dollars. On the other hand cattle, sheep, and hogs all show a slight decline.

The steady advance in poultry leads to some astonishing figures. The farmers' hens now produce 1 3/4 billions of dozens of eggs and at the high average price of the year the hens during their busy season lay enough eggs in a single month to pay the year's interest on the national debt.

After a careful estimate of the value of the products of the farm during 1904, made within the census scope, it is safe to place the amount at 4.900 million dollars after excluding the value of farm products fed to live stock in order to avoid duplication of values. This is 9.65 per cent. above the produce of 1903, and 31.28 per cent. above that of the census year 1899.

Some comparisons are necessary to the realization of such an unthinkable value, aggregating nearly five billions of dollars. The farmers of this country have in two years produced wealth exceeding the output of all the gold mines of the entire world since Columbus discovered America. This year's product is over six times the amount of the capital stock of all national banks, it lacks but three fourths of a billion dollars of the value of the manufactures of 1900, less the cost of materials used; it is three times the gross earnings from the operations of the railways, and four times the value of the minerals produced in this country.

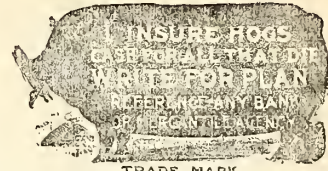
The year 1904 keeps well up to the average of exports of farm products during the five years 1899-1903, amounting to over 859 millions, while the average for the five years was nearly 865 millions. During the last 15 years the balance of trade in favor of this country, all articles considered, exceeded 4.384 million dollars, but taking farm products alone, these showed a balance in our favor of more than 5,300 millions.

Reviewing the increase in farm capital, the Secretary estimates it conservatively at 2,000 million dollars within four years—this without recognizing the marked increase in the value of land during the past two years. The most startling figures shown as illustrating the farmers' prosperity are those presented by deposits in banks in typical agricultural States. The Secretary selects for this illustration Iowa, Kansas, and Mississippi. Taking all kinds of banks, National, State, private, and savings, the deposits increased from June 30, 1896, to October 31, 1904, in Iowa, 164 per cent., in Kansas 219 per cent., and in Mississippi 301 per cent.—in the United States 91 per

HOG BOOK FREE!

Latest Revised Edition.

"HOG LOGY," my book about hogs, will be sent FREE if you mention Southern Planter when writing for it. Many new and important subjects, have been added, and some of those treated are: The hog a money maker, statistics, history, illustrations and descriptions of breeds, associations with address of secretaries, advice on selecting location, breed, breed sows, boar, etc.; pedigrees, quarters, foods, inbreeding, marketing, curing pork, fall pigs, exhibiting, anatomy of the hog, illustrated; diseases—more than fifty of the ailments to which the hog is subject plainly diagnosed, with cause, symptoms and treatment, etc., etc.



TRADE MARK

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if this is not the best hog book out. It was the first book of the kind ever issued for gratuitous distribution, the first edition having been issued more than 20 years ago, and it is the only book of the kind devoted exclusively to the hog, and written by a veterinarian and swine specialist.

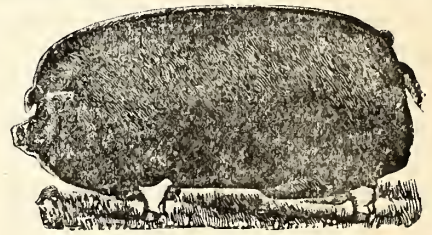
I PAY FOR ALL HOGS THAT DIE

when my Remedy is fed as a preventive. Full particulars regarding this insurance proposition in "Hogology." Its record for 28 years proves it to be the most successful hog remedy as well as the oldest.

Twenty-five pound can, \$12.50; 12 1/2 lb. can, \$6.50, prepaid. Packages, \$2.50, \$1.25 and 50 cents. None genuine without my signature on package or can label.

JOS. HAAS, V. S., Indianapolis, Ind.

POLAND-CHINAS.



GRAY'S BIG CHIEF, 57077.

I have a limited number of Pigs by my fine Boars, Gray's Big Chief, 57077, and Victor G, 57075, and can furnish pairs not kin or related to those previously purchased. Young Boars and Sows of all ages. Send to headquarters and get the best from the oldest and largest herd of Poland-Chinas in this State at one-half Western prices Address J. B. GRAY, Fredericksburg, Va.

BERKSHIRE BOARS,

READY FOR SERVICE,

FOR SALE.

Pigs of both sexes; and also

HERD HEADER Herd VI, after Dec. 20th,

He is two years old, and of best blood.

PHIL. H. GOLD, Winchester, Va.

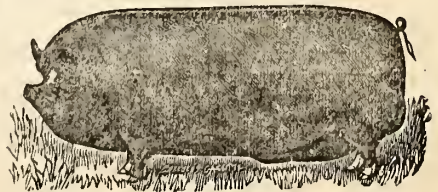
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A. W. HARMAN, Jr., Treasurer State of Virginia, Prop. Richmond, Va.

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Large ENGLISH BERKSHIRES

for less money than any firm in the South, quality considered. Every pig shipped possesses individual merit. Pedigree turn sheet with all stock. Kill or sell your scrubs and buy hogs that will pay. For prices and description address ALEX. HARMAN, Mgr., Lexington, Va.



25 Tons of Choice Timothy Hay For Sale.

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BILTMORE JERSEYS.—The American home of the Great Golden Lads—a family that has produced great milkers, with the best udders and show-yard records that the world has ever seen. Our bulls are out of dams owned and tested in the Biltmore Herds, and buyers can get as near to a certainty as is possible. Large, 52 week milk and butter records a specialty. Over four hundred in five different herds to select from.

BILTMORE BERKSHIRES.—No herd in the world has made as good a record. All the great Champions of England and America have either been in service or bred here. Our yearly offerings at unreserved auction are eagerly taken at nearly double the price of all previous records. The most successful herds all over the States are using a Biltmore foundation.

BILTMORE POULTRY.—Only the UTILITY breeds. Barred and White Plymouth Rocks, White and Golden Wyandottes, Brown and White Leghorns, Bronze Turkeys, Pekin Ducks. Over 50 yards of prize winners. Extra size, fine type, from fixed strains, and more prizes won at the leading shows than all competitors together.

Also a small kennel of extra choice, Rough coated imported Scotch Collies.

The Imperial Fruit and Poultry Farm

OFFERS, AT PRICES IN REACH IN ALL,

STRICTLY PURE-BRED

Barred and White Plymouth Rocks,

White and Silver-Laced Wyandottes,

S. C. Brown and White Leghorns.

Few B. Minorca Cockerels, Bronze Turkeys and Pekin Ducks.

SATISFACTION GUARANTEED.

WRITE TO-DAY FOR INFORMATION.

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

cent. A similar favorable comparison may be made as to the number of depositors.

The Secretary concludes that the farmers' rate of financial progress need fear no comparison with that of any other class of producers.

U. S. Department of Agriculture, Washington, D. C. Twentieth Annual Report of the Bureau of Animal Industry, 1903.

Bureau of Chemistry. Bulletin 85. The Cementing power of Road Materials.

Bureau of Chemistry. Bulletin 87. Chemical composition of some Tropical Fruits and their products.

U. S. Department of Agriculture, Office of Experiment Stations, Washington D. C. Experiment Station Record. Vol. XVI., No. 3.

Bureau of Plant Industry. Bulletin 58. The vitality and germination of Seeds.

Bureau of Plant Industry. Bulletin 59. Pasture, Meadows and Forage Crops in Nebraska.

Bureau of Plant Industry. Bulletin 57. Legal and customary weight per bushel of Seeds.

Bureau of Soils. Bulletin 23. Investigations in Soil fertility.

Farmers Bulletin No. 210. Regulations for the certification of Associations of Breeders of Live Stock and Books of Record of Pedigrees.

Department of the Interior. United States Geological Survey. Fuel-testing plant of the United States Geological Survey.

Alabama Experiment Station, Auburn, Ala. Bulletin 120. The Mexican Cotton Boll Weevil.

Cornell Experiment Station, Ithaca, N. Y. Bulletin 222. Record of an attempt to increase the Fat of Milk by means of liberal feeding.

Colorado Experiment Station, Fort Collins, Col. Bulletin 91. Potato failures.

Bulletin 92. Large potato vines and no potatoes.

Idaho Experiment Station, Moscow, Idaho. Bulletin 42. Experiments in feeding.

Kansas Experiment Station, Manhattan, Kas. Bulletin 125. Experiments with Dairy Cows.

Maryland Experiment Station, College Park, Md. Circular Bulletin 60. Fall treatment for San Jose scale. Circular Bulletin 61. Winter work against fruit diseases.

Michigan Experiment Station, Agricultural College, Mich. Bulletin 218. Some essential soil changes produced by micro-organisms.

New Hampshire Experiment Station, Durham, N. H. Bulletin 113. Corn meal middlings and separator skim milk for fattening pigs.

New York Experiment Station, Geneva, N. Y. Bulletin 254. Fall use of sulphur sprays.

North Carolina Department of Agri-



A Happy New Year

To you Farmers! You will certainly have a Merry Christmas as well as a prosperous, happy New Year, if you used on your crops at seed-time

Virginia-Carolina Fertilizers

Now, to insure yourself a happy New Year every year, and **all the year** through to Christmas—continue to fertilize your crops with these well-known brands. They will pay you handsomely. Write for information if your dealer cannot furnish you.

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BERKSHIRES! ❁ ❁ BERKSHIRES!

The following up-to-date stockmen think my ROYAL BERKSHIRES the finest the world can show. I could print thousands of the same opinion, but I take only one from each State:



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Take no risk; confer with these people, and order direct from the veteran breeder.

THOS. S. WHITE, Fassifern Stock Farm, Lexington, Virginia.

Five car loads bright Timothy Hay for sale, cheap.

We **positively guarantee** to breed and ship the **VERY BEST** strains of thoroughbred registered **LARGE ENGLISH BERKSHIRE** Hogs for **LESS MONEY** than any other firm in the U. S., the superiority of our stock considered. Send us your order and we will satisfy you both in price and stock.

WALTER B. FLEMING,

Proprietor of the Bridle Creek Stock Farm, Warrenton, N. C.



— URY STOCK FARM OF — HOLSTEIN - FRIESIANS

Have reduced our herd 25 head during the past two months, but would like to sell as many more before going into winter quarters. Herd headed by Dekol 2d, Butter Boy 3d, No. 2, which we can justly claim the best butter backed bull South of the Mason and Dixon line. Also a choice lot of English Berkshire sows from 3 to 9 mos. Sired by Manor Faithful, Fancy Duke and Esau Princess of Filston. Before buying write or come and see us. **THOS. FASSITT & SONS, Sylmar, Md.**

culture, Raleigh, N. C. Entomological Circular 12. The Strawberry Weevil.

Cider making on the farm.

Hampton Institute, Va. Animal Industry Leaflet No. 4.

Virginia Crop Pest Commission, Blacksburg, Va. Circular to nurserymen and fruit growers relating to the purchase of nursery stock.

Virginia Climate and Crop Service, Richmond, Va. Report for October, 1904.

Imperial Department of Agriculture for the West Indies, Barbados, W. I. Agricultural News, October, 1904.

GRAND PRIZE FOR THE STUDEBAKERS.

It is with great pleasure that we record the fact that the Studebaker Bros. Manufacturing Company won the grand prize, which was the highest award at the Louisiana Purchase Exposition. This award covered substantially everything made by the Studebaker people, including wagons of every description for city and farm use, all styles of harness and accessories.

As hundreds of our readers are using Studebaker wagons, etc., they will doubtless take as much pleasure in reading this notice as we have in writing it.

GOLD MEDAL.

The Gold Medal, (highest award for Grinding Mills) has been placed by the Louisiana Purchase Exposition on the Exhibit of the Foos Manufacturing Company, of Springfield, Ohio, a concern that is familiar to our readers. Not only have their products been frequently presented in our advertising columns, but their mills have been in use by most of the large successful planters throughout the South.

The company is now making a new line of mills, especially adapted for grinding corn in the shuck, and our readers are advised to write at once for prices and particulars regarding these and the other mills made by this noted company.

A neat Binder for your back numbers can be had for 25 cents. Address our Business Office.

Elkton Stock Farm,

LOCATED ON NORFOLK & WESTERN R. R.

12 Miles W. of Lynchburg.

Breeders of Pure Bred, Registered

HEREFORD CATTLE

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BERKSHIRE HOGS.

Young stock for sale at all times, at reasonable prices.

All statements and representations guaranteed.

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Rosemont Herefords.

2 finely bred bulls, 10 months and 1 year old, and 2 splendid heifers, bred to Acrabat, are our offering this month. Let us give you full particulars and pedigrees.

"A Brief History of Hereford Cattle" will interest you. Let us send you a copy. **ROSEMONT FARM, Berryville, Clarke Co., Va.**



ACRABAT 58460.

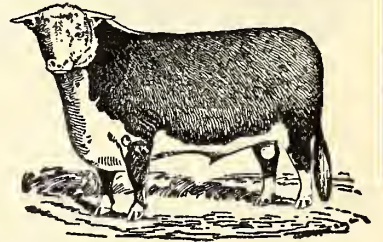
Registered Herefords,

Herd headed by the Grand Champion

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Hereford Cattle -:- Berkshire Hogs

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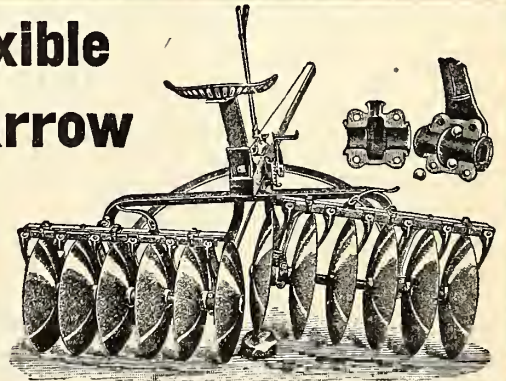
Toulouse Geese, Muscovy Ducks.

MOTTO: Satisfaction or no sale.

E. M. GILLET & SON, - Glencoe, Maryland.

Spring Flexible Disc Harrow

Only Harrow in the world with independent adjustable spring pressure upon inner ends of disc gangs. Any amount of pressure thrown on these inner ends by foot. Ball-bearing. Works uneven ground. All sizes, at proportionate prices.



Seasonable Implements of the latest style, always up-to-date. Possibly you are now or will soon need a Corn Sheller, Feed Cutter, Disc Plow. You can get our Catalogue for the asking.

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NORFOLK FARM SUPPLY CO.

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(Successor to Brauer Cattle Co.),

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 Bill stock in your name in my care.

BOOKS AND PAMPHLETS.

POULTRY FEEDING AND FATTENING.

A handbook for poultry keepers on the standard and improved methods of feeding and marketing all kinds of poultry.

The subject of feeding and fattening poultry is prepared largely from the side of the best practice and experience here and abroad, although the underlying science of feeding is explained as fully as needful. The subject covers all branches, including chickens, broilers, capons, turkeys and waterfowl; how to feed under various conditions and for different purposes. The whole subject of capons and canoning is treated in detail. A great mass of practical information and experience not readily obtainable elsewhere is given, with full and explicit directions for fattening and preparing for market. The broad scope of the book is shown in the following Table of Contents:

Profits in Poultry, Care of Poultry, Where to Keep Fowls, Breeds and Breeding, Feeds and Feeding, Hatching and Rearing the Natural Way, Artificial Incubation, Broilers and Capons, The Market End, Waterfowl, Turkeys, Guineas, Pea Fowls, Pigeons and Squab Raising, Enemies and Diseases.

Profusely illustrated, 160 pages; 5x7 1-2 inches. Cloth. Price, 50 cents, postpaid.

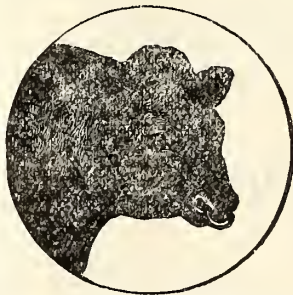
ORANGE JUDD COMPANY,
51 Lafayette Place, New York, N. Y.

Marquette Building, Chicago, Ill.
We can supply this book at the price named.

REGISTERED CATTLE.

Attention is called to the advertisement of the Landa Cattle Company to be found elsewhere in this issue. The offering consists of Registered Red Polls, Polled Durhams and Shorthorns, in large numbers.

A neat Binder for your back numbers can be had for 25 cents. Address our Business Office.

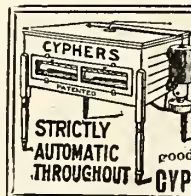


—The Delaware Herd of—

ROYAL ANGUS CATTLE

is not surpassed either in breeding or individual animals, by any herd in the East. At the head of our herd is PRINCE BARBARA, 68604, the son of the great \$9,100 Prince Ito. Females of equally choice breeding. Write your wants. Remember, we take personal care of our cattle; keep no high priced help; incur no expense of exhibiting; all of which enables us to offer stock at equitable prices. Send for pamphlet.

MYER & SON, Prop., - Bridgeville, Del.



Standard Cyphers Incubators

are guaranteed to hatch more and healthier chicks with less oil and less attention in your hands than any other, or your money back. Absolutely automatic and self-regulating. Used and endorsed by 42 Government Experiment Stations and by America's foremost poultrymen. Complete Catalogue and Poultry Guide, 212 pages (8x11.) more than 500 illustrations. FREE, if you send addresses of two neighbors who keep good poultry and mention this paper. Address nearest office.

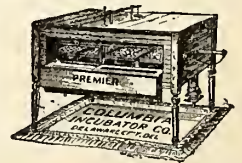
CYPHERS INCUBATOR CO., Buffalo, Boston, Chicago, New York, Kansas City or San Francisco.



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 PAINT will give your property a prosperous appearance.
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 PAINT is ready-mixed, and for the money no
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Economy is the Secret of Success

You Save Money When You Buy From Us

BEST QUALITY AND LOWEST PRICES.

Granulated Sugar, per lb.....	5¼c.	Prunes, 7 lbs. for.....	25c.
Arbuckle's Coffee, per lb.....	13c.	Quaker Oats, per package.....	10c.
Best Cream Cheese, 2 lbs. for.....	25c.	Dunlop Flour, per barrel.....	\$6.25
Mountain Roll Butter, per lb.....	15c.	Obelisk Flour, per barrel.....	6.25
Lemon Peel, per lb.....	12c.	Daisy Flour, per barrel.....	5.75
Orange Peel, per lb.....	12c.	Pillsbury Flour, per barrel.....	7.00
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L. L. Raisins, 3 lbs. for.....	25c.	Good Luck Baking Powders, 5c. can for.....	4c.
New Mixed Nuts, per lb.....	12c.	Good Luck Baking Powder, 10c. van for.....	8c.
Hard Shell Almonds, per lb.....	10c.	Octogan Soap, per bar.....	4c.
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Shelled Almonds, per lb.....	30c.	Bran, per ton.....	22.50
Currants, 15 oz. packages.....	8c.	Best Hay, per ton.....	16.50
Sultana Raisins, per lb.....	10c.	N. C. Corn Whiskey, per gallon.....	2.00
Filberts, per lb.....	12½c.	Best 5 year old Corn Whiskey, per gallon....	2.50
Palm Nuts or Negro Toes, per lb.....	12½c.	Old Crown Rye, per gallon.....	3.00
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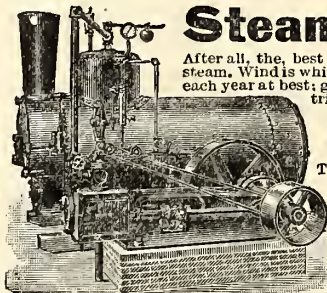
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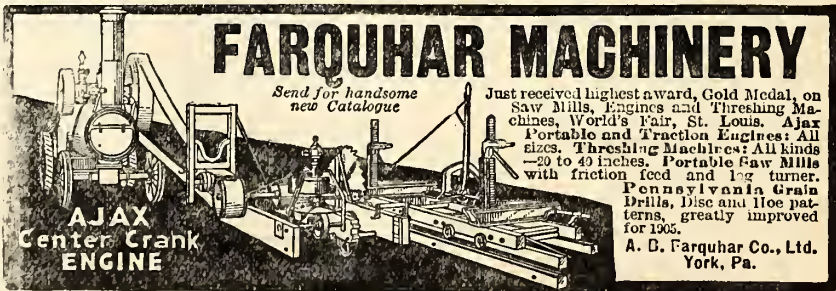
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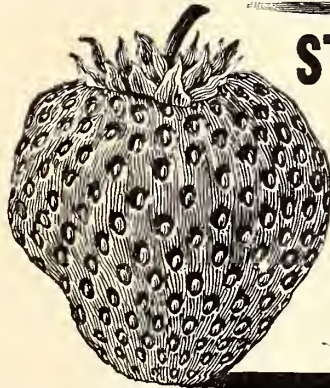
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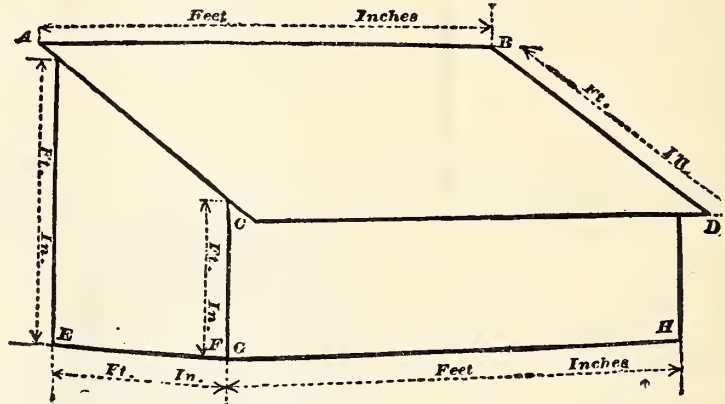
CHRISTMAS PRESENTS.

Mary Washington.

As Christmas approaches, I am reminded of one of Mr. Dooley's most amusing articles, viz., the one on the subject of Christmas presents, hitting at the numerous disappointments and misfits connected with these. Such misfits occur from persons not taking time and pains to reflect and discriminate about the presents they buy, and also they are sometimes occasioned by the inadequacy of the purchaser's funds. Generally however they come more from want of judgment and reflection than from want of means. Most people put off buying their Xmas presents till a short while before Xmas when the stores are so densely thronged that they cannot get waited on satisfactorily, and then they get worried and flurried, and hastily and injudiciously buy whatever they can get hold of most easily. If you can command the funds in time, it is far better to do your Xmas shopping in November, or even earlier. I have known persons who would begin months beforehand picking up first one pretty and tasteful article appropriate to a certain friend, and then another, whenever they happened to come across some tempting bargain, and in this way, they got suitable and acceptable articles, and avoided the rush of late Christmas shopping. It is important to study the tastes and needs of the persons to whom you wish to make presents, so as not to give idly or indiscriminately. If you have a friend who loves reading, nothing could be more appropriate and acceptable than a book, but the question arises, what kind of book shall it be? People have such various tastes about reading. What is a mental feast to one person would be absolutely distasteful to another, so you must consider your friend's bent of mind before choosing a book for her or him, as the case may be. There is a wide range of choice fiction, poetry, drama, history, biography, travel, religious reading and miscellany. In all these departments, admirable works await those who know how to choose them. A year's subscription to some good periodical is also a delightful Xmas present for a person who is fond of reading, and the oft recurrent arrival of the periodical, gives more pleasure than the one volume given at Christmas. It gratifies people especially to have something given them for their own individual use or pleasure, and this is particularly the case with hard working, self-denying people who spend little or nothing on the indulgence of their own tastes and fancies, but use their means to buy utilitarian things for the common good of the household. Instead of making a so-called present of this nature to the laborious mother of the household, give her a nice pair of kid gloves, a package of fine handkerchiefs, a dainty volume by her favorite author,

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Painted Corrugated Roofing, Painted V. Crimp Roofing, Roofing Tin in boxes or rolls, Tarred Roofing Felt, Perfected Granite Roofing.



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a photograph of some fine painting to hang in her bed room, or a pretty pair of vases for her mantel piece. I have read of a man who would make his wife a present of a new cooking stove or some similar article at Christmas. Instead of giving her some little article that showed special thought of herself, her needs or her fancies, some little article, no matter how trivial, intended for her personal use, pleasure or adornment. Such thought on the part of the husband tends to bring back the roses to the faded cheek of the toil worn wife, and to create a youthful gladness in her heart.

A graceful and appropriate offering at Christmas is something of our own production, and if the recipient be a person of any sentiment, this will be more prized than any other kind of present. Those who do fancy work have it in their power to make beautiful presents of their own handiwork, though the strain on their eyes, and the amount of time and labor required to prepare these presents make them more burdensome than others, but still it is a burden willingly borne for the sake of sentiment and affection. Presents of this kind require to be planned long beforehand, so that the work may be gradually done, and not fall too pressingly on the eye sight and time just before Christmas.

Flowers or plants are a lovely Christmas offering, and they seem doubly so, if they come from the pit or green house of a friend where they have been tended by her own hands. A hamper filled with red berries, running cedar, ferns and evergreens, is a charming present for a country person to send a city friend and delights the latter far more than any gift of "manufactured mechanism."

Where persons have limited means (as is the case with the majority) it is a good thing for two or three members of the family to club together when they wish to make an especially nice present. It secures the increased results which always flow from co-operation. In this way, two young girls, for instance, might arrange to give a nice rocking chair to their mother, or a pretty piece of silver, or they might give a more valuable book or magazine to their father than either one could do singly.

Finally, I would say to those who are not so situated as to make Christmas presents, you can still show the Christmas spirit of peace and good will, and show a kindly interest in and hearty sympathy with others. Above all, if you have any breach with friends, neighbor or relative, let Xmas be a season of reconciliation. Let it be a time for forgiving and putting away all bitter and resentful thoughts.

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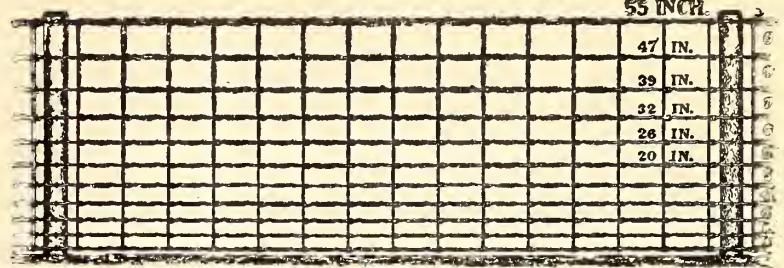
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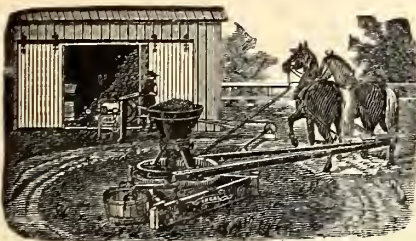
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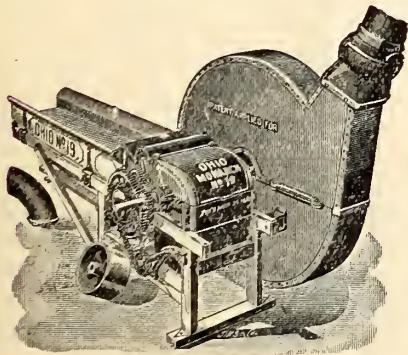


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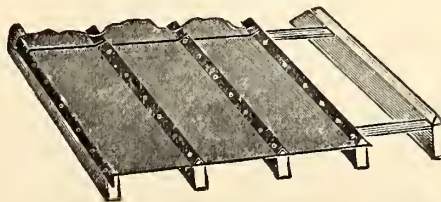
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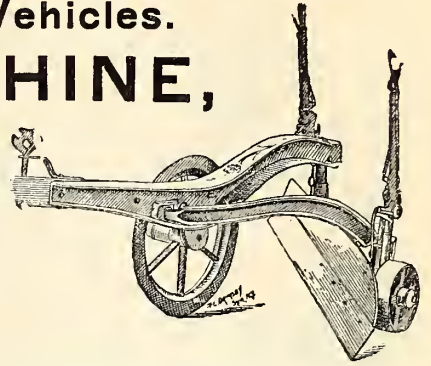
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THE UNIT ROAD MACHINE,

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Gentlemen: The UNIT machine purchased of you came a little late for running out leads in my wheat fields, yet I have given it a fair trial at that work; also cutting down and pulling off ditch banks, and find it just the thing for these purposes, saving time, team and labor. It is useful in other ways about the farm, such as pulling in roads and leveling low places in fields which would take twice the time and labor with the common scoop.

I am so well pleased with it that if I could not get another I would not sell at double what it cost me.

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Record 2:27 Sire of McChesney, 2:16 3/4, etc. Bay horse by Electioneer 125; first dam, Esther, dam of Expressive 3, 2:12 1/2; Express 2:21, etc.; by Express etc. Kell represents the highest type of a trotter, having fine size and the form and finish of a thorough-bred. For terms of service address

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Kelly will serve at my private stable, 1102 Hull street Manchester, Va.

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"The Gentleman in Black."

Winner of the Criterion Stakes, Pelham Handicap, Brooklyn Derby, Belmont Trial and Tidal Stakes.

Black horse, by Powhatan, dam imp Invercauld, by St. Albans; 2d dam imp Eleanor, by Voligeur; 3d Themis by Touchstone; 4th dam Rectitude (dam of Latus, Dr Calus, Chivalry and Aristides), by Lottery; 5th dam De-Ison (dam of Brown Stout XXX and Silvio), by Magistrate, etc. etc. BURLINGTON will make the season of 1905 at J. E. Lane's above named farms at Esmont, Albemarle county, Va.

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He is a rich bay in color, stylish and handsome, 1 3/4 hands high; weight 1200 lbs Address

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full brother to the famous Mo ello Brown horse, by Eolus, dam Cervin, by imp. Moccasin, 2nd dam Lizzie Lucas, by imp Australian, 3rd dam Eagles, by imp Glencoe.

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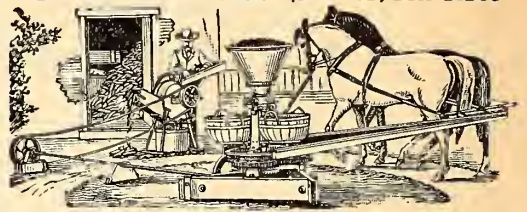
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These machines sell at sight. They have heavy fly wheels and make three cuts to each turn of the crank. They will cut hay, straw or fodder, and will cut from 1/2 to 2 inches. They are shipped K. D., securing the lowest possible freight rates.

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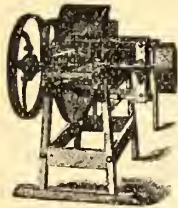
The frame is made of thoroughly dry hard wood. The joints mortised tenoned and bolted. The bearings are bolted on the frame instead of screwed. The iron work is made from the very best material, every piece is carefully inspected before being put on. This machine is high-grade all the way through. It is handsomely painted, striped and varnished.

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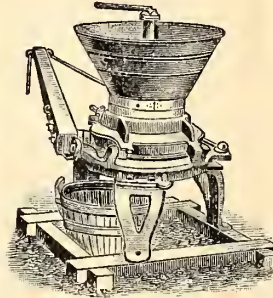
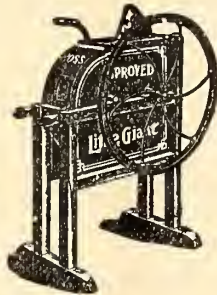
The SCIENTIFIC Grinding Mills

Are unequalled for grinding ear corn, shucks on or off, Corn, Oats, Wheat and all other grains, single or mixed.



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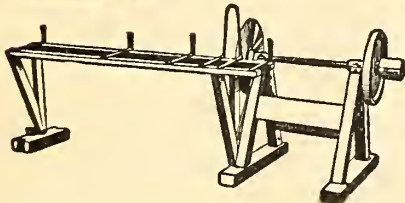


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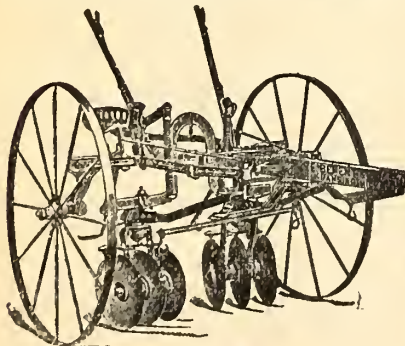
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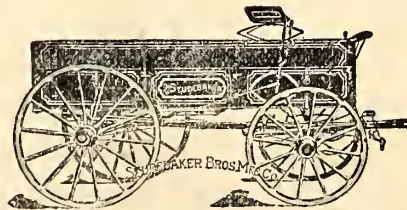


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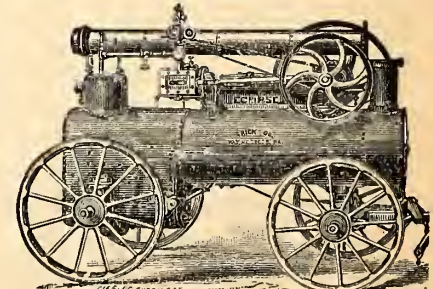


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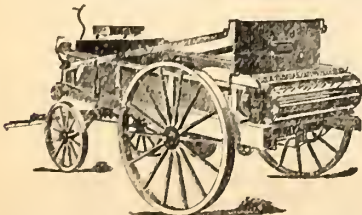


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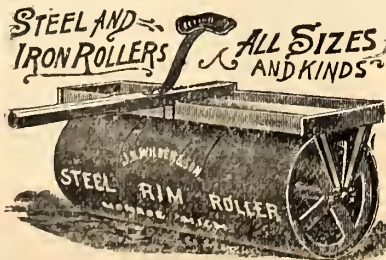
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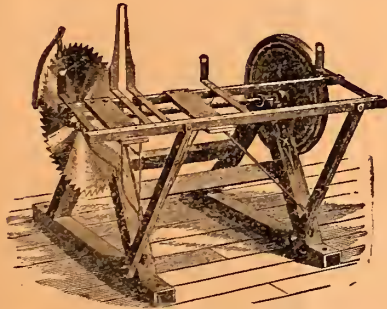
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THE WATT PLOW CO., INC.,

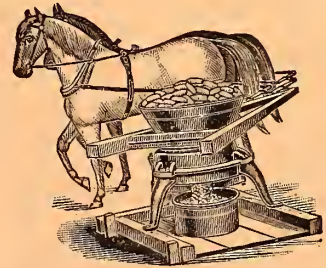
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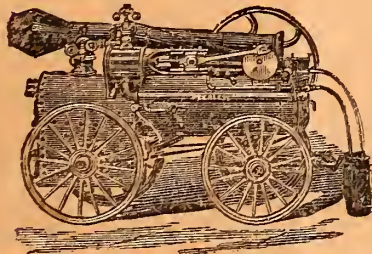
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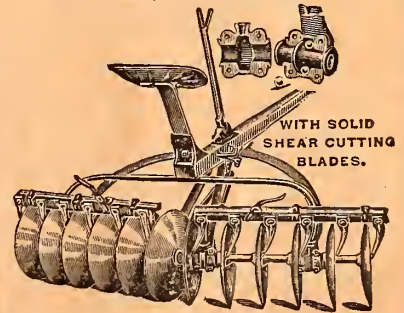
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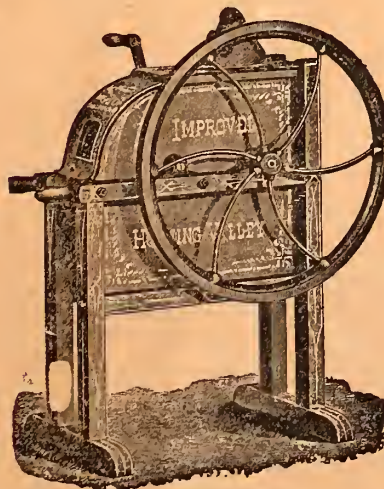
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of all descriptions al-
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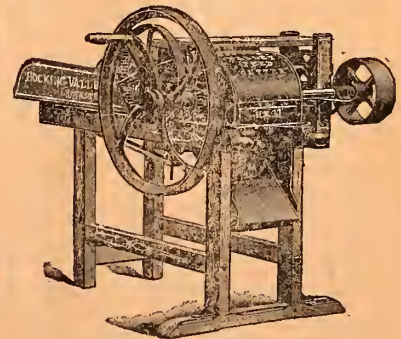
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