

Established 1840.

THE

Sixty-fourth Year.

Southern Planter

A MONTHLY JOURNAL

DEVOTED TO

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

OFFICE: 28 NORTH NINTH STREET, RICHMOND, VIRGINIA.

THE SOUTHERN PLANTER PUBLISHING COMPANY, - - - Proprietors.
J. F. JACKSON, Editor and General Manager.

Vol. 64.

FEBRUARY, 1903.

No. 2.

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

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

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

64th Year.

Richmond, February, 1903.

No. 2.

Farm Management.

WORK FOR THE MONTH.

At the opening of a new crop year it may be of interest and advantage that we review what was done in the way of crop production in the Southern States during the year just ended. Lessons may be learnt from a consideration of this question which may result in much benefit, and a comparison of these results with what has been done elsewhere may lead to efforts for greater results in the future. The past year, it may be remarked, was in the South, on the whole, a fairly normal one, so far as weather and climatic conditions were concerned, except in respect to the wheat and winter oat crops which suffered severely from very late seeding in the fall of 1901, owing to the wet condition of the land and also from severe weather in the early winter. The area planted in corn in Virginia in 1902 was 1,879,348 acres; the yield per acre was 22 bushels; the crop produced was 41,345,656 bushels of the value of \$21,499,741. The area planted in corn in North Carolina was 2,706,682 acres; the yield per acre was 13 bushels; the crop produced was 37,622,880 bushels of the value of \$22,573,728. The area planted to corn in South Carolina was 1,825,837 acres; the yield per acre was 10 bushels; the crop produced was 18,988,705 bushels of the value of \$13,102,206. The area planted in corn in Maryland was 628,982 acres; the yield per acre was 32 bushels; the crop produced was 20,379,017 bushels of the value of \$10,393,299. In Tennessee the area planted in corn was 3,337,047 acres; the yield per acre was 21 bushels; the crop

produced was 73,081,329 bushels of the value of \$34,348,225. The wheat crop of Virginia was grown on 637,806 acres; the yield per acre was 5 bushels; the crop produced was 3,635,494 bushels of the value of \$2,872,040. In North Carolina the wheat crop was grown on 567,558 acres; the yield per acre was a little over 5 bushels; the crop produced was 3,055,757 bushels of the value of \$2,811,296. In South Carolina the wheat crop was grown on 267,673 acres; the yield per acre was 5 bushels; the crop produced was 1,495,969 bushels of the value of \$1,528,948. In Maryland the wheat crop was grown on 757,000 acres; the yield per acre was 14 bushels; the crop produced was 11,129,223 bushels of the value of \$8,013,041. In Tennessee the crop of wheat was grown on 840,381 acres; the yield per acre was 7 bushels and the crop produced was 6,050,743 bushels of the value of \$4,598,565. In Virginia the oat crop was produced on 222,074 acres; the yield per acre was 17 bushels; the crop produced was 3,886,295 bushels of the value of \$1,632,244. In North Carolina the oat crop was produced on 238,143 acres; the yield was 12 bushels per acre; the crop produced was 3,024,416 bushels of the value of \$1,542,452. In South Carolina the oat crop was grown on 216,541 acres; the yield per acre was 13 bushels; the crop produced was 2,836,687 bushels of the value of \$1,673,645. In Maryland the oat crop was grown on 42,132 acres; the yield per acre was 26 bushels; the crop produced was 1,124,924 bushels of the value of \$427,471. In Tennessee the oat crop was grown on 180,071

acres; the yield per acre was 17 bushels; the crop produced was 3,219,028 bushels of the value of \$1,351,992.

When we come to compare the yields of these cereal crops with the production of the like crops in other States north and west, we find that not only do these Southern States fall in nearly all cases much below the average for the whole of the United States, but very seriously below the yield per acre in other States not nearly so naturally well situated for the production of the crop. Take for example the New England States in the matter of corn. There the yield runs from 21 to 31 bushels per acre. In Pennsylvania the yield was 36 bushels per acre, whilst in the great corn belt of the West the yield runs up as high as 39 bushels to the acre. Again, take wheat. Whilst the average for the United States was 14 bushels per acre here we only made 5 bushels, this being the lowest yield made in the South for many years, and about half the usual average. The average yield of oats in the United States was 34 bushels to the acre. Here we made less than half that yield. Surely such a showing as these crops make cannot be regarded with satisfaction by our people. There is no reason whatever, either in climatic or soil conditions, why the production of all these staple cereal crops should in the South fall so much below the average of the country and so greatly below that of other States not nearly so well situated. The great underlying cause for this bad showing is *poor preparation of the land before seeding*, and in the case of the corn crop careless, inadequate cultivation after planting. Sufficient effort is not made to secure deep, well broken land, capable of conserving the rainfall and moisture so much needed, especially in the South, nor is adequate consideration given to the necessity for filling our soils with vegetable matter—(humus). Many Southern farmers insist that the small yields of cereals here cannot be avoided on land which has been so long under cultivation as Southern lands have. That this conclusion is erroneous is shown by the average yields of the cereal crops in England, where the land has been under cultivation hundreds of years longer than in the South. The average yield of wheat in England was last year nearly 34 bushels to the acre, and for the last ten years the average is nearly 31 bushels per acre. The average yield of oats there last year was nearly 44 bushels per acre, and for 10 years nearly 40 bushels to the acre. Corn is not grown in that country, and therefore cannot be compared. It is time for the Southern farmers to take this matter of crop yield per acre into serious consideration with the determination that such paltry yields as are now made shall cease. There can be no profit in producing 20 bushels of corn or 5 or even 14 bushels of wheat, or 17 bushels of oats to the acre. What

is needed at the least is to double the yield per acre and this will be soonest brought about by halving the acreage planted or sown and giving the reduced area the extra working and cultivation which in the past has been expended on the larger area, and by planting leguminous crops on the abandoned area and feeding these to stock to make manure to feed the reduced area and make it rich and productive. The crop statistics issued by the Department of Agriculture, from which we have quoted the foregoing figures, in one particular refute strongly the commonly current idea that the South is not a section adapted to the production of hay. These show that Virginia devoted last year 472,913 acres of land to the production of hay and that the average yield per acre was 1.06 tons, producing a total crop of 501,288 tons of the value of \$6,807,491. In North Carolina the average yield of hay per acre was nearly 1½ tons. In South Carolina the average yield was nearly 1¼ tons per acre. The average production of hay over the whole country was only 1½ tons per acre. In New York State, which grows the largest acreage of hay of any State in the Union, the average production was only 1½ tons per acre. In this respect, therefore, the South compares favorably with the rest of the country, and this fact should induce greater attention to this crop, which is one which conserves the fertility of the land, renders possible the keeping of a greater head of live stock, and thus provides the means for producing heavier crops without recourse to fertilizers. It is a crop also which is as readily salable, as corn on the market, and with our ability to produce the heaviest forage crops on the arable land, can often be wisely converted into a sale crop and its place be taken in feeding stock by the forage crops.

The production of tobacco in the South Atlantic States last year was in Virginia 136,769,250 lbs. grown on 182,259 acres. In North Carolina, 142,520,950 lbs. grown on 219,263 acres. In South Carolina 25,625,408 lbs. grown on 34,912 acres, with a small acreage in Georgia, Florida and two or three other States. The value of the tobacco crop in Virginia is put at \$12,309,232, in North Carolina at \$15,677,304, and in South Carolina at \$3,331,303. In Maryland the quantity produced was 31,300,625 lbs. grown on 34,081 acres, and of the value of \$1,491,044. With the exception of Kentucky, which produced 257,755,200 lbs. grown on 322,194 acres, North Carolina and Virginia are the largest tobacco-producing States in the country. The yield per acre, however, in these States is much below that of the New England and other Northern tobacco-producing States. In Virginia, the average yield per acre was 750 lbs., in North Carolina 650 lbs., in South Carolina 734 lbs. In the New England States, the average yield runs from 1,500 to 1,800 lbs.

to the acre, whilst in Pennsylvania the yield was 1,275 lbs., and in Wisconsin 1,340 lbs. to the acre. Much of this difference in the yield is no doubt to be accounted for in the different types of tobacco grown in the South, but there is, nevertheless, room for great improvement in the yield per acre here. We have known over 2,000 lbs. of tobacco to be grown on an acre here on several occasions, and something much nearer this figure than 750 lbs. ought to be grown of the dark heavy shipping types which are so largely produced in this State. The same cause lies largely at the bottom of this deficient production as of the deficient production of the cereal crops, and the same remedy should be applied. More *intensive* and less *extensive* farming.

The weather since the new year came in has been quite seasonable. We have had severe frosts, but little snow. We are always glad to have wintery weather in January. It is needed for the best interests of the farm. Insect and fungous pests are very apt to become serious troubles during the period of crop production unless we have sharp weather in January. If we do not get winter in January in the South, we are very apt not so get it at all, as the heat of the sun becomes quite an important factor in February. With sharp frosts in January, the ice crop can be secured, and this is quite an important feature in the South, especially on dairy farms. This year good ice has been secured right up to the Atlantic Seaboard. The frost and wet condition of the land when not frozen has put a stop to plowing, and it will take some little time of dry warm winds to fit it again for the teams. The long fine fall and early winter gave abundant opportunity for fall and winter plowing, and very much more land has been broken for crops than is often the case. Where this work was properly done, there is now a reserve of moisture in the ground, which, if carefully conserved, will do much to meet the needs of crops during the growing season. Land not already plowed should be given attention as soon as dry enough to break, but do not be in too great a hurry. Land plowed when wet never makes a good seed-bed, however much it may be cultivated. Land already plowed should not be allowed to dry out too much. As soon as it is dry enough to harrow down freely, put the harrows on it, and commence the preparation of the seed-bed. This will prevent the loss of moisture from the subsoil and conserve the water for the crop. It will also be the means of making available the inert plant-food in the soil. Even in soils said to be largely exhausted, there is always a great reserve of mineral fertility, which can be made available for the support of crops by frequent cultivation. Southern farmers have been in the past very remiss in this re-

spect. They will plow the land once and harrow once, and then proceed to plant the crop either without fertilizer or with just a small application, and then complain that the crop makes a poor yield. It cannot do otherwise, because of the mechanical condition of the soil. Even the fertilizer applied cannot be properly or fully available for the crop under such conditions. Experiments made in a number of States have shown conclusively that it is possible to make a profitable yield upon land said to be largely exhausted without the application of any fertilizer by frequent and perfect plowing and cultivation. Plowing too often fails altogether to fulfil its proper function. Good plowing is not merely the inversion of the surface soil—it is the inversion and *breaking* and *mixing* of the soil. It is impossible for the fine hairlike root fibres, which carry food to the plant to permeate and search out the plant food in the soil where it is full of hard lumps. The whole seed-bed should be made as fine as possible, then these little fibres can thread their way in and out of the interstices of the soil and appropriate, by the aid of moisture, the food elements always more or less present. Another great purpose served in the fine breaking of the soil by repeated plowing and cultivation is that it permits of the free working and multiplication of the soil microbes, upon which largely depends the fertility of all soils. A hard lumpy soil is largely a dead soil, and a dead soil is an unproductive one. This necessity for microbial life in a soil is largely a new discovery in agricultural science, but the more fully it is investigated the more important appears to be its necessity. The presence of humus in the soil and an alkaline condition are found to be conditions precedent to this active microbial life. Hence the necessity for lime and leguminous crops in the development of soil fertility. The two great factors necessary to fertility are soil moisture and microbial life, and these are both encouraged and maintained by finely worked and broken soil. Where it is intended to apply mineral fertilizers to the land, such as acid phosphate and potash, these ingredients may be more profitably applied now than at the time of seeding the crops. They require time to become available and thoroughly assimilated with the soil. There need be no fear of loss by leaching. Where farm-yard manure is to be applied, it should be got on the land at once and be spread and worked into the soil with harrow and cultivator.

Get out all farm pen and stable manure as it is made, and spread it on sod or arable land. It had much better leach out on the land than in the farm yard. The leachings there will not be lost, as is too often the case with those in the farm yard. If grass land, which is intended to be mown for hay be top-

dressed with manure from the yard, which is an excellent way in which to improve the soil, the manure should be got out at once and be spread evenly on the land. After it has laid a week or two, run over the land with a bush harrow and thus break the manure out finely and work it into the roots of the grass. Then follow the bush with a horse rake, and thus get off the long, strawy matter which, if left on, will mix with the hay and spoil the sample.

It is too early yet to seed any crop, except Canada peas and oats, in either Virginia or North Carolina. Further South, oats may be sown after the middle of the month. Canada peas and oats may be sown up to the end of the month in Middle and Eastern Virginia and North Carolina, and up to the middle of the month of March in Piedmont and the mountain sections of those States. This crop is better seeded in December and January than in February, and we advised attention to it in those months. We have, however, known good crops made seeded in February. It is a Northern climate crop, and requires to complete its growth before the hot weather sets in, or mildew will destroy it. Its value as an early forage crop for hogs, sheep and cattle is great, and it also makes fine hay. Sow $1\frac{1}{2}$ bushels of peas per acre, and plow them down or put in deep with a drill; they should have a cover of at least four or five inches. Then sow broadcast three quarters of a bushel of oats and harrow in. If the land is poor, apply 300 lbs. of acid phosphate to the acre and work in with the harrow. When the peas and oats have commenced to grow freely, apply 75 to 100 lbs. of nitrate of soda to the acre as a top-dressing, and a vigorous growth will be assured. Where the land is in fair fertility and has grown peas before, the nitrate of soda will not be needed, as the peas will soon be vigorous enough to secure their own nitrogen from the atmosphere.

Grass and clover seed not seeded in the fall (which is the proper time all through the South, except in the mountain sections) if a good stand is to be confidently expected, should be sown during this month and in the first half of March. We have always advised against sowing grass and clover with a grain crop where a permanent stand of grass is desired; and each year that passes only adds to our certainty that we are right in this view. More money has been wasted on clover and grass seed seeded with grain than in almost any other way on the farm. The practice of so seeding was introduced from England, where climatic conditions are so different from our own. There, there is always an abundance of moisture in the ground, and none of the hot, burning weather which we have in the summer. Harvest time is much

later, and thus the shading of the young grass and clover is continued until the cool fall months. Here, lack of moisture in the land begins to be felt early in the summer, and the grain crops mature and are cut just at the time when the power of the sun is greatest. The result is, that the growth of the grass and clover is weak and spindling, and it is laid bare to the burning sun just when it most needs protection. Thousands of acres are thus lost every year. If seeded in the fall, a much stronger root growth is secured before the hot weather sets in, and the cutting of the grain may not result so fatally; but our advice is, whether seeding in fall or spring (but most certainly when seeding in the spring), never to seed along with grain. The grain crop is much more robust and quicker in growth than the grass and clover, and is thus better able to forage for support, and appropriates the moisture which the small plants so greatly need. Instead of a nurse crop, the grain crop becomes a robber crop, and the grass and clover is a failure. When seeded alone, the grass and clover is given a chance to secure what it needs, and being unshaded, becomes robust and hardy in growth and able to resist the power of the sun and rarely fails to make a good stand if soil fertility is sufficient; and if—and this is a great if—weeds are not so numerous as to smother it out. Weeds will beat even a grain crop in killing out a stand of grass and clover. Never seed grass and clover on land full of weed seed. It is only labor and seed wasted. If land is clean, then sow from two to three bushels of grass seed to the acre, with 10 or 12 lbs. of clover seed, and a fair stand may be expected. We believe in heavy seeding of grass. Our experience has convinced us that only in this way can a satisfactory sod be secured. The percentage of seed which is viable and will grow, is in grass seed always much lower than in the case of larger seeds, and much of that seeded never comes to a mature plant. Even if it sprouts, a large proportion has not vitality enough to resist unfavorable conditions of weather and soil. Let the land be well prepared and the seed bed be made as fine as possible before seeding, and do not spare manure and fertilizer. An application of 300 or 400 lbs. of bone meal to the acre will always be found profitable when seeding to grass. It gives up its plant food slowly, and thus the effect is long continued. After seeding roll the land if it is dry enough to roll without packing on the roller. This will do much to ensure quick germination. If a piece of land seeded with grass or clover in the fall has failed to make a good stand, this may be improved by harrowing lightly and then reseeding with about a half seeding of grass and clover, following with the roller. As to the kind of grass to be seeded: For a permanent meadow on good sound land, we would seed a mixture

of Orchard Grass, Tall Meadow Oat Grass, Herds Grass (Red Top), and Meadow Fescue. On low, damp land, we would seed Italian Rye Grass and Herds Grass—adding in each case from 5 to 8 lbs. of red clover. Timothy should be seeded alone. For a pasture, a much greater variety of grasses is best, as they mature at different seasons and thus lengthen the season of feeding. For this purpose sow on sound, loamy soils Tall Meadow Oat Grass, Meadow Fescue, Virginia Blue, Orchard, Peennial Rye, Red Top, and 2 or 3 lbs. of Red Clover. For moist bottom land, sow Red Top (Herds grass), Italian Rye, Meadow Fescue, Orchard Grass, Perennial Rye, and Alsike Clover.

Tobacco plant beds should be got ready and be seeded as soon as possible. See that the land is well burnt and all weed seeds destroyed and the surface soil made fine and rich, so that the seed, when it germinates, may be able to grow off quickly. Select land that is well filled with vegetable matter, so that it will not crust and pack hard, and mind that provision is made for drainage and for keeping the bed moist. Cover with plant-bed muslin.

After deciding the location and area of the different crops to be grown, make out lists of the seeds and fertilizers required and give your orders to the merchants at once, so that these articles may be on hand when wanted. Do not have to wait and lose the best opportunity for putting in your crops from inability on the part of the merchants to deliver goods just immediately when ordered.

"MANURE SAVING."

Editor Southern Planter:

By purchase we came onto a rather ancient and much abused farm. Its barn was on the old-fashioned plan of two log pens about 30 feet square with drive way through center under roof and a story above.

A shed about 12 feet wide was built all the way round and boxed up. After the first season's winter feeding in the face of fast and frozen blasts, laden frequently with sleet, snow and rain, we concluded the thing was too open and friendly in its disposition and that we would shut some more of the weather out. So cracks on north, east and west sides were all battened up tight, light studding was put up inside, covered with building paper (this only cost 75 cents for 500 square feet), then ceiled with rough lumber up to loft. Two heavy rolling doors were made to close up the drive way from the north, each 13 feet wide.

Having completed these cheap but most paying improvements, we thought of all the liquid manure

which had hitherto gone to waste on the dirt floor, even in spite of a liberal use of bedding. One could not read your paper long and continue to ignore the saving of this most available source of plant food for the thin places in his land.

A thorough investigation of stall plans seemed to indicate that the Van Norman would suit us best. With mill stuffs a cent and a quarter or half a pound, and even hay nearly a dollar per cwt., it was estimated to save its cost, extra over some of the simpler sorts, in feed during a single season. What's lumber here anyway. We bought two inch hard wood for these floors and manure troughs at 50 cents per 100.

We find it almost impossible for a cow to waste a particle of either bran or roughness out of these feed troughs.

One shed on the south side of barn was taken up by the feed alley running next to the log wall, thus throwing all the droppings and walkway next the outside of barn. Through the outside of this shed we cut holes about 18 inches wide and 3 feet long, one to each two or three cows. The manure is thrown out of these directly from the fork into a second leanto, thus avoiding its handling twice and wheelbarrow rolling. This addition is merely a light framework running the full length of the barn or the south side with shingle roof and sides looking very much like a plank fence with the fence turned wrong side out. It is handy to load manure from along side, and as the manure thrown out is kept well covered with straw and the sun shines into the shed nearly the whole of a winter day, it makes a favorite place for the Shorthorns to lounge around, basking in the sunshine.

A weekly sprinkling of dry dirt or Tennessee phosphate or gypsum prevents the escape of ammonia whilst the tramping of other stock packs it down after the tearing up of hogs hunting waste grain. Heating is thus avoided. The beneficent influences of dry dirt and sunlight are not fully appreciated by the average farmer. We know from experience that stock do better when given the freedom of covered yards protected against north winds, and are of opinion that a better quality of manure is made thereby. Certainly less water is uselessly loaded and hauled to the fields than is the case when taken from manure cellars or the stalls themselves. With all sorts of feed stuffs \$1 per 100 pounds it is difficult to see much profit in stock feeding without counting in the manure. This is not unreasonable so long as we pay \$20 per ton for fertilizers. Manure carefully saved and wisely used will of itself pay a fair profit on the production of the feed. The feeder's *cash outlay* for concentrated feeds should be repaid otherwise.

"MAPLEHURST."

WHEAT GROWING.

Editor Southern Planter:

In your November number, under the head of "Farm Management," you say, "A crop of wheat that can be well seen above ground before hard frosty weather sets in will almost invariably make a better yield than one which is two or three inches high at that time." This does not agree with the opinion of most of the practical farmers of this section. The aim is here to sow as soon as can be done and avoid damage by the "fly." There are some farmers who are willing to risk the fly in order to get their wheat in early, saying that late sowing has been more damaging than the fly. This has been a very favorable fall on the wheat. The land was or could be put in fine order, and the rains have come in right quantity and not washing. My neighbor, among many who sowed very early this season, started his drill September 9th. Mine was started September 22d. Both fields have a rank growth. His has been well pastured and mine grazed a little. There are those here who claim that wheat pastured by sheep will yield four or five bushels more per acre on *good land*. Still another successful farmer says he does not think wheat should be pastured, that he never saw any too rank in the fall. What I call a rank growth is from 6 inches to 12 inches high, varying according to the fertility of the soil.

What you say of a thorough preparation of the soil must be concurred in by every observing tiller of the land, but my opinion is that this should apply to all other crops. Tillage and clover is my motto in farming.

We are all anxious to learn more, and we would like to know, Mr. Editor, why you consider a short growth of wheat in the fall better than a larger one which has a chance to become well rooted before freezing weather commences?

Lexington, Va.

P. M. W.

In reply to the foregoing we would say that the opinion given was largely founded on personal experience in wheat growing. We have vividly in remembrance a crop grown many years ago which so forcibly impressed the lesson of too early sowing as to cure us permanently of the habit. In that year we sowed the first wheat on the 30th of September. We continued to sow as the land was ready all through the month of October, and finished seeding on the 5th of November. At Christmas the wheat sown on the 30th September was so tall and rank as to completely hide a hare in the field. The wheat sown on the 5th of November was nicely out of the ground—say 2 or 3 inches high. The winter was not a very severe one, but on the whole favorable for the crop. At harvest time the difference between the earliest and latest seeded crop was very marked. The earliest seeded had thousands of ears more per acre than the last seeded, but these ears were small and badly filled, whilst the last seeded were long and well filled. When thrashed the last seeded made more than twice the yield per acre of the early sown crop, and the quality of the grain was very much superior. This has also been our ex-

perience in other years. The effect of the early seeding is to cause the wheat to spindle up and tiller too freely, thus inducing a weakly growth very apt to fall down in wet weather and to stay down. The weak, slender straw does not carry sufficient food to the ear to make a good, plump long ear. Its root growth is defective. Whilst, therefore, experience has convinced us that reasonably late sowing is preferable to too early seeding we desire not to be set down as advocates for very late seeding. There is a proper time to seed, and this we believe to be neither too soon nor too late. In this section of the South we think October is the best time, and not before the 10th of that month. We like to have a sharp frost before we seed, and then we are reasonably sure that we shall not suffer from the fly. After the 10th of October there is plenty of time for wheat on well prepared land to make all the growth needed for it to go through the winter without serious damage, and it will then start off in the spring vigorously and with a strong root growth to maintain vigorous growth. There is considerable difference of opinion as to the grazing of wheat. If the land be dry and the crop has made a rapid fall growth we think the practice one to be commended as tending to induce root growth, but a weakly plant ought not to be grazed.—ED.

CLEANING UP WASTE LAND IN EASTERN VIRGINIA.

Editor Southern Planter:

The longer I look around the more I become impressed with the fact that I need advice by the bushel.

There is a good deal of so-called "waste land" on this place. The slopes, bends, gullies and low lands along a creek take up about 50 acres, including about ten acres that were in cultivation up to a few years ago. This ten-acre patch I have plowed and sown to rye (with fertilizer) for early pasture. I hope the stock will leave enough standing so that I will not have to sow it again next fall, and can keep it seeded by plowing under what grain may be left over.

Part of the 50 acres is covered with tall grass, among which young pines have grown up here and there. I think this would make fair grazing by burning the old grass and cutting down the few pines.

Part is grown thickly with young pines. I presume there is nothing better to be done than to cut these down and wait until the stumps rot.

Part—about ten acres—is grown up so thickly with bushes and briars of all sorts that a dog can hardly get through. I have been told that it will cost not less than \$10 per acre to clear this land. Is there no other way than to grub out the bushes? If cut, will not the stock keep down the young growth?

I have enclosed this 50 acres, together with 10 acres of heavy wire grass, with twelve-strand woven fence. Nearly all of the sixty acres are fairly good clay soil. Some places wash badly, and these I shall plant to

wire grass. Would plant wire grass all over but for the fact that it lasts only for such a short season. How would a mixture of native blue grass, red top and fescue do for the wet places and timothy, orchard grass, white clover, red top and, perhaps, a little Kentucky blue grass for the hillsides?

If I can get a nice green sod on this waste land, I shall consider it the most valuable part of the farm. But I have other waste lands, little corners cut off by ditches from the fields, river banks and corners of all sorts, that are either too small or not conveniently located to be attached to the pastures. The largest of these patches may be five acres, others are only a fraction of an acre; some are grown up to weeds, others to broom straw, others to scrub pines, and others to timber that is of little or no value owing to location. Some of this land is loam, some clay, and some gravel or sand. These waste lands are unsightly, bring no revenue, and add nothing to the value of the place. I have been thinking of planting a few acres to cedars to provide posts for the future, as I am clearing the better located woods for fields. Would it be advisable to plant young fruit trees, such as standard varieties of apples, plums and cherries? I might manage to give them one or two cultivations for a few years, but could not give much care to the trees. There are probably over 30 acres of corners on the place that are not easily accessible with wagons and machinery or accessible only during the dry months. I would like to put this land to some moderately profitable use. They are now eyesores and harbors for all sorts of vermin.

Hanover Co., Va.

"GREENHORN."

The work of cleaning up the odd waste patches and corners on a farm is one that is much too often neglected. Even if the direct profit resulting from the utilization of the land is not large, there is an indirect profit which is a large one. The attractiveness of the place is enhanced and value is added to it in the eyes of a prospective buyer. As breeding places for insect pests and fungoid diseases, and as nurseries for the growth and perpetuation of weeds, they are sources of never-ending loss on the farm until cleaned up. We are therefore heartily in sympathy with our correspondent in his effort to get rid of these places on his farm. Wherever these places are covered with pines and other forest growth, not of sufficient value to make lumber, these should be cut down in the summer, and the stumps will then rot out in a couple of years. Where there is a heavy growth of reeds and coarse grass, these should be burnt off in the early spring, and if the patch is not large enough to cultivate in an arable crop, then Japan clover should be sown on it at the rate of 12 pounds to the acre. This will grow up with the grass, and in the end cover all the plot, and at the same time improve the land and fit it to carry a better sod. This clover will make only grazing in this section, but will be found a great addition in that respect, and will continually reseed itself. Where the patch is large enough and the soil good enough to carry a grass sod, we would break it with a

small harrow or cultivator, and the damp low lying places we would seed with red top (herds grass), meadow fescue, perennial rye and meadow grass. The drier land we would seed in the same way with orchard grass, tall meadow oat grass, Virginia blue grass and red fescue. Bermuda grass (wire grass) will also do well on the drier land and keep green in the hottest weather. If along with the Bermuda grass some Virginia blue grass, meadow fescue and perennial rye grass was sown, it would help to make a winter pasture. We could not advise the planting of fruit trees on these low lying lands, as the chance of a crop would be very doubtful. Frost is always more destructive to fruit blossom on these low lying lands than on the hillsides. The cold currents of air are there stagnated, and even late blooming varieties are made unfruitful. Besides, fruit grown in such places never keeps well. The idea of growing cedars for fence posts on part of the lots is one worth considering. We would suggest the growing of catalpa trees on part of the lots for the same purpose. Several of the large railroad companies are now planting thousands of acres in catalpa for ties and fencing purposes. The tree grows fast, and makes excellent posts, rails and ties. The Department of Agriculture has recently issued a bulletin on this subject which it may be well to obtain. Wherever pieces of land are large enough and accessible enough to be put under cultivation, we would, as soon as the stumps are rotted out, put into a crop and work for at least a couple of years and then put down to grass. In no other way can a good sod of permanent grass be had. Whilst young cattle will browse on bushes to some extent, yet they will rarely succeed in so keeping them down as to ultimately destroy them. Goats will, however, do so, as they prefer to browse rather than graze. In an experiment recently made in one of the New England States, a few Angora goats cleaned up a piece of brush land thoroughly in a couple of years. We should be inclined to try this plan with some of the plots. The cost would not be great, and the goats would bring in some income, besides fitting the land for a better use, and at any rate making it more sightly.—ED.

Planting Bermuda Grass.

Will you please tell me in the next month's *Planter* if it will do to plant Bermuda grass roots in the latter part of February and March. I planted in August, September and October, and did not get a stand.

Iredell Co., N. C.

O. E. SHOOK.

Yes.—ED.

When corresponding with advertisers mention the *Southern Planter*.

ENQUIRER'S COLUMN.

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

Grass for Pasture.

Please let me know through your inquirers column the kind of grass seed to sow on a field of woodland which I have cut off. The land is a gray land with red clay subsoil. I want to coultter it up and sow it in February or March.

Orange Co., Va.

E. M. HARNSBERGER.

We presume that this is intended for pasture as no thing is said about having removed the stumps. We assume the land to be dry and light. On this we would sow 2 to 3 bushels per acre of a mixture made up of Tall Meadow oat grass, orchard grass, Herds grass, Virginia Blue grass, Meadow Fescue and Perennial Rye grass.—ED.

Nitrate of Soda on the Oat Crop.

Would you recommend the use of a nitrate of soda on oats and wheat? If you can, please state best time to use it, and how much per acre.

C. A. S.

See reply in this issue as to the use of nitrate of soda on wheat. Use in the same way on oats.—ED.

Canada Peas—Angora Goats.

I tax you for a sufficiency of your valuable time to answer the following questions:

Is it practicable to buy Canada field peas to sow this winter now, here in Louisa county, with no visible chance of getting them in the ground as early as you advise in a recent issue of the *Planter*? Seed quoted by a Richmond firm at \$1 65 a bushel?

Having 135 acres of land, nearly all thicket, just such as you find over much of this section unfit on account of growth for grazing cattle or sheep, would you advise the purchase of a flock of Angora goats to feed on this land; and if so, how many?

Would four strands of barb wire be a sufficient fence to enclose? Have fine, roomy barn, shedded on three sides on land, and land lies convenient to my farm. Please state comparative profit of goats and sheep, and also as nearly as you can, what first cost of goats per head would be.

Apple Grove, Va.

JAMES H. QUISENBERRY.

We have known a crop of Canada peas and oats, seeded in the first week in March in Chesterfield county, to make a fair crop; but the spring was a cold one. They should be got in earlier than this to give them a fair opportunity. If you can seed this month, the crop might be worth the cost, and the land would be improved for the cow peas to follow.

In this issue you will find a reply to a query as to Angora goats, to which we refer you. We are strongly of opinion that on such land as you describe, goats will be found profitable, both directly and indirectly. They will clean it up and fit it for cultivation cheaper

than in any other way. You should have at least fifty goats to get ahead of the brush growth on 135 acres of land. We think four strands of wire would enclose the goats.—ED.

Rotation of Crops.

I have been sowing wheat every other year after wheat—sowing clover with wheat in every instance, cutting only one crop of clover when I got a stand, and when I did not get a stand of clover, I sowed peas. Thus you see I got a clover or pea fallow each time I sowed wheat, using at time of seeding a heavy application of bone meal and acid, and my lands seem very much improved; yield of wheat increases every year. But now comes the question: Will they continue to do so with this mode of treatment and farming, or would you advise a rotation of crops? If so, please name crops in rotation that should be cultivated on these lands before they come to wheat again. These lands, when I started four years ago, were as poor as poverty; could not reasonably expect to more than get my seed back, but I now get from ten to fifteen bushels per acre.

C. L. DOGGETT.

Mecklenburg Co., Va.

Yes. Your lands will continue to improve under this system so long as you take care to supply every year, or every other year, a sufficient quantity of phosphoric acid in the shape of bone meal or acid phosphate to meet the needs of the crops raised and to balance the nitrogen gathered from the atmosphere by the clover and peas. It would be an advantage to use a dressing of, say 25 bushels of lime per acre every third year on the clover fallow. This would make available the potash and phosphoric acid in the soil, and also tend to keep the soil alkaline enough for the production of clover, which cannot grow in acid soil. The turning down of so much green vegetable matter has a tendency to cause acidity, and hence your clover fails sometimes. Possibly an application of 50 lbs. of muriate of potash with bone meal, and acid phosphate every few years, might also be of service, though we think it likely that you have a fair supply of potash in the soil naturally.—ED.

Peas and Sorghum.

I have a forty acre field that was fallowed and sown in wheat (red land), and sown with timothy and clover with 200 lbs. of fertilizer. The drought caused no growth in the fall, and in the spring the drought again prevented any growth until late in May. The result was no grass, and only some 240 bushels of wheat. I am thinking of sowing it in peas, with a little sorghum, by a disc drill, after plowing, say three fourths bushel peas, two quarts sorghum, and 100 lbs. fertilizer per acre, in May, and cutting it by mower, when peas are forming to make hay. Would this improve the land and allow a crop of corn to follow in spring of 1904; or can this be improved?

Culpeper Co., Va.

B. F. CLARK.

The land should be in sufficiently good fertility to make a crop of corn after the peas and sorghum; but it would be an improvement to make an application of

200 lbs. of acid phosphate, instead of 100 lbs. of fertilizer. Peas are great consumers of phosphoric acid, and can never do their best and thus supply all the nitrogen they are capable of doing unless it is present in abundance.—ED.

Cow-Peas, Soy Beans, Crimson Clover, Rape, &c.

I would be glad to know the best way to cultivate the following, and when to seed the same: 1st. Cow-peas. 2nd. Navy beans. 3d. Crimson clover. 4th. Rape and Mangel Wurtzel beets for cattle or sheep in fall and winter. J. W. BONNER.

We shall deal with the raising of these various crops in our issues during the spring and fall months when seasonable, and to these issues refer the enquirer.—ED.

Horse Training—Artichokes,

Please recommend to me some good book on training horses from their birth up. Also please tell me when and how to plant artichokes.

Isle of Wight Co., Va. N. PEYTON YOUNG.

The Saddle Horse—a complete guide to riding or training. Price, \$1.00. Horses—How to handle and educate vicious—Gleason. Price, 50 cents. We can supply these books. In this issue will be found advice as to artichokes.—ED.

Corn-Growing.

In this neighborhood, people tell me that we cannot raise corn except we plant the corn on ridges and then keep it ridged as much as possible. Then I have been told that it is an old custom and nothing in it. That we can plant the corn just the same as in the North and get just as good corn. Please give me the best way, as I do not wish to make a mistake and lose my corn.

Norfolk Co., Va. JOE M. CHRISTENSEN.

We shall deal with this subject fully in our spring issues, to which we refer the enquirer. Meanwhile, we would only say, take no notice of people who advise you to ridge corn. We have for years been preaching level cultivation of corn, and have got thousands to follow our advice, and always with success.—ED.

To Kill Wire Grass.

Could you give me a plan or system by which one can most easily rid a piece of land of wire grass?

I have recently bought a piece of land, and five or six acres of it is strongly set in wire grass, and has not been cultivated for several years.

Any information along this line will be much appreciated. Would be glad to know if wire grass and Bermuda grass is the same in every respect.

Edgecombe Co., N. C. F. J. DOZIER.

The only way to get rid of wire grass is to shade it heavily. We know of a case where a piece of land similar to that described was completely rid of the grass in two years by planting two crops of corn on it. The corn was planted in rows three feet

apart and six or eight inches apart in the row, and was cut for the silo. The corn made a very heavy growth, and at the end of first year very little wire grass could be found. The second crop completed the work. Bermuda and wire grass are the same.—ED.

Maintaining Fertility of Land—Dorset Sheep—Sheep for Mountain Land.

1. Can rolling land be kept up to its present fertility, or improved, by the following method of rotation: Sow cow peas in corn at the last working, and when the corn is in hard roasting ear state turn in enough hogs to "hog-down" the entire crop, then sow rye on same land, and when it is large enough graze with sheep or hogs as late in the spring as it will be safe for it to make a crop; after the rye has matured "hog-down" the entire crop again. After the rye is all consumed and the rag weeds have made a good start commence to plow the same land again for corn the following spring, subsoiling when possible and sowing peas when practical, and "hog down" the whole crop as before, then sow in rye and so on indefinitely? The foregoing method would obviate the risk of clover, save labor, machinery, a great deal of worry and more money, if it does not impoverish the land.

2. Do you know it to be a fact that Dorset sheep will defend themselves against dogs?

3. What breed of grade sheep would you recommend crossing Dorset rams on to breed up a flock of high grade Dorsets, providing you could not procure grade Dorsets at a reasonable price? Are Dorsets as good or better than some other breeds for mountain land? C. T. BLACK.

Boyle Co., Ky.

1. Such a rotation and system of consuming the crops on the land as you suggest would no doubt maintain and enhance the fertility of the land for a time, but could not be indefinitely continued without impoverishing it and ceasing to be profitable. The several crops named are large consumers of phosphoric acid and potash, and whilst the existing supply of these minerals in the land continues sufficient, the rotation would be successful; but as soon as these begin to fail, then profitable production would cease. You cannot supply the deficiency in one form of plant food by a superabundance of another. They must each be present in equivalent proportion. If 300 or 400 lbs. of acid phosphate and 50 lbs. of muriate of potash was applied per acre each year, then the rotation might go on almost indefinitely with success, as the peas would supply the nitrogen from the atmosphere.

2. Dorset sheep we know will defend themselves better from dogs than any other breed. We have one advertiser of this breed who offered to make good any Dorset sheep supplied by him which were killed by dogs.

3. Whilst the Dorsets are hardy sheep, we do not regard them as especially a mountain breed. Their original home was on the low rolling lands of one o

the warmest counties in England, and they are most fitted for similar lands in this country. The Merinos will do better on high mountainous land, and the true mountain sheep of the north of England and Scotland still better. We would cross the Dorset rams on Merino ewes.—ED.

Nitrate of Soda for Wheat.

When is the best time to apply nitrate of soda to the wheat crop, and what quantity should be used? Should it be harrowed in, or will it do as well left on the surface? How much will it increase the yield?

C. M. H.

Nitrate of soda should never be applied to any crop until it is commencing to grow. It is so very soluble that unless root action is active, much of the nitrate is apt to be lost by leaching into the subsoil. Apply to wheat just when the crop starts in the spring; we have seen it make a wonderful change in the color and rate of growth in a week. Apply from 75 to 100 lbs. to the acre, broadcast. It need not be harrowed in, but it is well to harrow the wheat before sowing the fertilizer to break the crust and incite root action. We have frequently known it to increase the crop from five to ten bushels to the acre, and make what would have been a complete failure a fair crop.—ED.

Grinding Bones for Fertilizer—Preparation for Corn—Melon Growing.

I am starting on a farm outside the city. Among other things, I shall raise some poultry.

1. I have bought a Mann bone mill to run by power. Would it pay me to grind bones for fertilizer as well as for chicks? I have plenty of green bones from my own shops, and have the power on my premises. For what crops would the bone be most suitable, and about what should be its marketable value? How should it be applied?

2. I have some land fallowed for corn. Would it be best to broadcast the manure on now, and let it lay, or keep it in the barn yard till spring, and then apply just before planting time? Apply it now, will not the ammonia and other parts of it evaporate and be lost?

3. What is the most approved manner for preparing the ground for melons, and what is the best manure and fertilizer?

A. E. BURCHER.

Warwick Co., Va.

1. We do not think that you would find it practical to grind bones for fertilizer with a Mann mill. The bones used for fertilizer are first freed from grease and fat by boiling before being ground. The fat is of no value as a fertilizer, but rather a hindrance. These bones are then dried and ground to a powder much finer than a Mann mill will produce. Bone meal is valuable, is a source of phosphoric acid, and has also a small percentage of ammonia. It is one of the most useful phosphatic fertilizers used—being lasting in its

action. It is excellent for wheat and grass production, and should be applied broadcast at the rate of 300 to 500 lbs. to the acre.

2. Apply the manure broadcast at once. It will waste less in the field than in the barn-yard.

3. The land should be deeply plowed as soon as dry enough, and be left rough for the weather to break it down until April. Then work it fine and lay off the hills by running furrows lengthwise six feet apart and cross furrows six feet apart. At the intersection of these furrows, open a space with a hoe three feet in diameter and put in two or three forkfuls of good farm yard manure, upon which spread a handful or two of good truck fertilizer and mix the two. Then cover with good soil to the depth of three or four inches and plant the melon seeds on this bed after the ground is warm.—ED.

Alfalfa Growing.

I want to raise alfalfa for meadow, and as it is a new grass in Southwest Virginia, I want you to please advise me how to start it.

The Southern Planter recommends sowing it in fall; but I do not think it can stand the freezing here in winter, as the soil is of such a nature as to be readily heaved by the alternate freezing and thawing.

What time in the spring do you recommend sowing it? We very often loose red clover by sowing early in the spring, and the frost killing it. Is alfalfa easily killed by frost? Is it best to sow broadcast or drill it? How much seed is required per acre? Ought it to be fertilized? If so, what kind and how much per acre? If it be fertilized, would it be best to mix grass seed and fertilizer together and drill, or not? If sown in March or April, and it grows off nicely, should it be mowed this year or not? The land is good where I am going to sow it.

JNO. B. FERGUSON.

Russell Co., Va.

Whilst we are strongly of opinion that alfalfa should in the South, as a general rule, be seeded in the fall, yet exception should be made in the mountain sections—say above 1,000 feet in elevation, or wherever the winter is very severe. Where these conditions apply, the crops may be seeded in the spring at any time from April to June. The land should be well prepared and a fine seed bed be made. If not rich, it ought to have an application of 250 lbs. of bone meal to the acre, and if at all acid, which is nearly always the case where clover fails, it should have a light dressing of lime worked into the soil after it is plowed, say 10 to 20 bushels to the acre. Alfalfa will not grow on sour land. If alfalfa has never been grown on the land before, it will succeed much better if a sprinkling of soil from a field which has grown alfalfa be applied. This will infect the land with the necessary bacteria. Some of these are always found on the seed, but usually not as many as necessary to make the best growth. Sow 20 lbs. of seed per acre broadcast. Do

not sow with a grain crop of any kind. Be careful to sow only on land free from weeds. These are the worst enemies the crop has usually to contend with in the South. After the crop has grown five or six inches high, run over it with the mower, clipping it back to three inches. Repeat this three or four times during the summer, leaving the clippings as a mulch, unless they become too heavy and fit for hay, when they should be removed.

The following remarks by Professor Hopkins on the growing of alfalfa in the Middle West are so valuable that we desire to bring them to the notice of all our readers. We take them from the *Breeders' Gazette*:

1. Nitrogen costs at least 15 cents a pound in commercial fertilizers, and the farmers of the United States (chiefly in the older States) are paying millions of dollars every year for commercial nitrogen.

2. The atmospheric pressure is fifteen pounds to the square inch; four fifths of the atmosphere is nitrogen; there is as much nitrogen resting upon every square inch of the entire surface of the earth as is contained in one ton of ordinary farm manure.

3. Alfalfa requires more nitrogen for successful growth than any other farm crop and more than even our rich prairie soils can furnish; and, consequently, to grow alfalfa without bacteria not only exhausts the soil of nitrogen, but requires heavy applications of manure to keep the alfalfa from dying.

4. When inoculated with the proper bacteria and grown on soils which are not acid, alfalfa has free access to the unlimited and inexhaustible supply of atmospheric nitrogen, and it then becomes the greatest nitrogen-gathering plant known to American agriculture.

5. Alfalfa hay contains at least 2½ per cent. of nitrogen and eight tons of alfalfa hay which frequently have been, and can be, and should be, produced from one acre of land in a single season contain at least 400 pounds of nitrogen, which is as much nitrogen as is contained in 400 bushels of corn or in forty tons of farm-yard manure, an amount of nitrogen which in the form of commercial fertilizers would cost at least \$60.

6. These are not estimates; they are facts, absolute, positive and well-established facts; and if we can put our soils in suitable condition to grow alfalfa—by inoculating the soils which need inoculation, by liming the soils which need lime, by applying phosphorus to the soils which are becoming deficient in phosphorus (and even at the expense of a few dollars per acre)—shall we not do it?

7. The Illinois Experiment Station has cured four crops of alfalfa hay without loss and without difficulty during the very wet season of 1902. But even if we should lose a crop of hay because of wet weather, we could well afford to use it for manure. For manurial purposes one ton of alfalfa hay is worth more than four tons of ordinary farm yard manure.

8. Alfalfa hay is an excellent feed for horses, cattle, sheep or swine. It is a richer feed than red clover and requires less corn to be fed with it to produce equal results.

Cotton Fertilizer—English Peas.

1. *Muriate of Potash for Cotton.*—I would like to know if I can safely use 100 lbs. of potash per acre for cotton. I used 50 lbs. per acre last season with satisfactory results. My lands are old cultivated, medium light soil, with clay subsoil.

2. *English Peas.*—I would like to have some information in regard to English peas. How many bushels (in the hull) is considered a fair crop per acre—say land that will yield forty bushels of corn per acre with good fertilization? Are they a profitable crop for shipping to Northern markets, provided they are ready for shipping in May?

Vegetables and Fruit Packed in Lime.—I would like to hear from others that have tried the lime receipt in the October issue. I packed a lot of tomatoes, some nearly ripe, some green, in a box with air slaked lime as per instructions, some two months ago. I opened them recently, and found that some of them had rotted and others had dried completely up.

Marlboro Co., S. C.

J. FLETCHER.

In South Carolina a very elaborate and carefully-conducted series of experiments was made upon the Experiment Station farms some years ago to determine the fertilizer requirements of the cotton crop. The soils selected were typical of the upland soils of the State, and had been much exhausted. The conclusions reached were in part as follows:

1. Cotton requires nitrogen, phosphoric acid and potash.

2. Of the three, phosphoric acid is relatively the most important, and controls the action of the other two.

3. Nitrogen is relatively more important than potash.

4. Potash, when applied separately, is of little value.

5. With proper allowance for cost, as well as the effect of each application, the requirements may be more exactly given as follows, for a crop yielding 300 lbs. of lint per acre: Nitrogen, 20 lbs.; phosphoric acid, 50 lbs.; potash, 15 lbs.

It is concluded that the amount of phosphoric acid and proportionate amounts of nitrogen and potash cannot be indefinitely increased with the expectation of obtaining a corresponding increase in the crops. The maximum quantity of fertilizer that can in general be used with advantage, is concluded to be an amount that will furnish per acre phosphoric acid, 50 lbs.; potash, 15 lbs.; nitrogen, 20 lbs. In general, the most effective amount of fertilizer was 652 lbs. per acre, made up of—

Acid phosphate	468 lbs.
Nitrate of soda	130 lbs.
Muriate of potash.....	54 lbs.

652 lbs.

It would seem, therefore, that it would not be wise for you to increase the potash to 100 lbs., even though you correspondingly increased the other ingredients.

2. Very large crops of English peas are grown in Tidewater Virginia for shipping in May and June to the North and for canning. They are in a good season, usually regarded as a profitable crop, and the area planted is constantly increased. We have no reliable data as to the average yield per acre. You ought to be able to grow them quite as profitably in South Carolina, as you should strike a very early market when the price is high. They ought to be in the ground now to do this.—ED.

Grass Seeding.

Will you please state in your next number how much Evergreen should be seeded to an acre. Some say one bushel, but I want to know for certain how much, and how much red top or herd grass.

Campbell Co., Va.

W. C. JONES.

We presume you refer to Tall Meadow Oat Grass when you speak of Evergreen grass. We would seed from a bushel and a half to two bushels of the meadow oat grass and a bushel of herds grass. We believe in heavy seeding of grass seeds, and this belief is founded on long practical experience. We never sowed less than three bushels to the acre, and nearly always secured a good stand sufficient to smother down the weeds.—ED.

Pecans—Grass Seed.

Enclosed find half dozen "pecans" that I shook from tree to day—9th January. I have six trees 15 to 35 feet in height—the larger ones 40 inches in circumference—from Texas nuts planted about fifteen years ago. Four of the trees have borne a few nuts for some three years; two produced nuts not quite so good as the ones enclosed. They bear more, but on account of late ripening, they do not mature before cold weather or frost. I do not know how those nuts compare with the first nuts grown, but think they are as good as the average nut offered in the stores. We propose to graft some on seedling Hickories to try to get them to come into bearing earlier. The trees stand in stiff clay land or sod, but fertile.

I would take advantage of this opportunity to ask you or your readers to advise us the best and most practical way to get rid of "persimmon bushes." They are a great nuisance with us. I have them from half an inch to three inches in diameter at bottom and ten to twelve feet in height. Will Angora goats eat persimmon bushes?

What is the advantage of the lawn grass mixtures over Kentucky blue grass for lawns where the soil is stiff red clay and naturally runs into blue grass and white clover? Z.

Rappahannock Co., Va.

Our Virginia friends seem determined to prove to us that pecans will grow in Virginia. We never disputed this, but merely said that it was not the best and natural latitude for them, and that we could not advise planting them in this State for profit. The nuts

sent us are fair ones, but not so fine as those sent us from Norfolk county, Va.

The advantage in seeding lawn grass over Kentucky blue grass alone is, that you secure a mixture of grasses which mature at different times, and therefore tend to keep a lawn in fine order through a longer season than one variety alone. We know of no other way to get rid of persimmons than to grub them out, except that if browsed for years by goats sufficiently numerous to keep them from leafing, they will die out. Any tree or plant kept from leafing will eventually die, but some, like persimmons, are very tenacious of life.—ED.

Improving Mountain Land.

My father has recently purchased about 2,000 acres of very rich mountain land in Mitchell county, N. C. Some 800 acres of this land is cleared, much of which lays as smoothly as valley land, and is covered with native sod, which seems to fatten cattle fairly well. He is thinking of plowing up this sod and sowing blue grass and red top, thinking that he can carry a greater number of cattle. If any of your correspondents have had any experience with this kind of land, I would like to get some information as to whether it is practical to establish a permanent blue grass sod.

The soil is very deep and black, and the timber is mostly sugar tree, buckeye and bass wood. Timothy grows to perfection, will produce about two tons to the acre. How would a timothy seed farm pay on this land? What machine would you recommend for thrashing timothy, oats and rye? This land is not suited for growing wheat, as it lays from three to four thousand feet above the sea level.

Sullivan Co., Tenn.

J. H. REYNOLDS.

We would like to hear from some of our subscribers on this subject, as it is one with which we have had no practical experience. Please oblige us.—ED.

Fertilizer for Grass and Clover.

I have a field well set with timothy and clover—would it be profitable to sow Orchilla guano this spring towards making a good hay crop, and next spring to be turned under for corn, and how much should I use per acre?

York Co., Pa.

A SUBSCRIBER.

We doubt much whether you would derive any benefit in the hay crop from the use of Orchilla guano as a top dressing. This is a phosphatic fertilizer, and wants to be mixed with the soil to secure its benefit. You would derive much more advantage from an application of 75 to 100 lbs. to the acre of nitrate of soda just when the crop commences to grow. This is a very soluble fertilizer, and will benefit the crop at once. Apply the Orchilla guano in the early spring after plowing down the sod in the fall or winter, and it will benefit the corn crop.—ED.

Artichokes—Best Cross for Grade Hogs.

The *Southern Planter* is the best "farming implement" on my farm, and I can't do without it. Please give in your next issue information about artichokes, what is the best variety? how many to the acre? what is the best time to plant? what kind of land is best for them? and what is the method of cultivation?

Which makes the best hog, Poland China male on Berkshire sows, or Berkshire male on Poland China sows?

Northumberland Co., Va.

W. S. DILLER.

We have a high opinion of the value of artichokes as a feed for hogs. They are also good feed for milch cows, but it is as a hog crop that we most value them. Curiously enough, we have this month a letter from an old subscriber complaining that his hogs will not eat them. In all our long experience, we have never before had such a complaint. We have subscribers who grow acres of them and feed large herds of hogs on them with the most complete success. The best variety to grow is the Jerusalem or White French. This variety will produce from 300 to 700 bushels to the acre, according to the fertility of the land and the season. They should be planted in rows about 3 feet apart and about 2 feet apart in the rows. Prepare the land as for corn. Then open out a furrow and drop the sets as with Irish potatoes. These sets may be either whole roots if small or cut ones if large. Every piece with two or three eyes will make a plant. Cultivate as for corn. In the fall turn in the hogs and let them harvest them for themselves, digging sufficient first to provide seed for another year. If desired, a portion of the crop may be lifted, and be stored like turnips to be fed to the hogs when the land is too hard frozen for them to root them out. If not needed for the hogs, they may be fed to cows.

A cross of Berkshire male on Poland-China sows will be best, as the Berkshire is more prepotent than the Poland China, having been longer bred pure.—ED.

Cattle Dying—Texas Fever or Blackleg—Lice on Hogs.

Through my pasture is a stream of running water (a creek). The past summer being an exception it dried up, except in holes. This my cattle would drink. Fresh water was drawn for them daily, but they seemed to prefer the creek water. In September two heifers were sick three or four days, died, and were carried off, and no one seemed to know what was the trouble. In October two more young heifers died. In their case I found it a genuine case of hemorrhagic fever. I began the use of quinine, but I think too late. In case of another attack, will you kindly tell me what to do? Will kerosene oil, poured on hogs until it runs off their sides, damage them? Object, to kill lice.

Cumberland Co., N. C.

W. C. FIELDS.

We are inclined to think that your cattle died from either Texas fever or Blackleg. If there was a puffed and swollen condition of the skin on the legs up near

the body, and this when rubbed over with the hand gave out a crackling sound, the disease was Blackleg. For this, inoculation with Blackleg vaccine, which is advertised in our columns and can be had from the Experiment Station Blacksburg, is a certain preventive. If the disease was Texas fever this is caused by ticks, and there is no known cure. The remedy is to keep the cattle free from ticks. Clean off all ticks by picking and then grease them about the legs and under the body with grease of any kind, in which mix a little carbolic acid. A pasture which has carried cattle which have had Texas fever is sure to be infested with ticks and no other cattle should be put on that pasture for a year. The ticks will then be exterminated as they cannot perpetuate themselves unless they have cattle to feed and breed on, nor can they crawl or fly out of the fields. Such a field so cleared can only again become infested by the introduction of ticky cattle and will be perfectly safe for clean cattle even from the North.

We have frequently poured kerosene on hogs to kill lice without any injury to them. Very thin skinned hogs will sometimes be blistered by it. It is not necessary, however, to do more than pour a little oil down the centre of the back. This will soon spread in a thin layer over the whole body and will kill the lice without hurting the hog.—ED.

Angora Goats.

I am considering the purchase of a flock of Angora goats, and as I know little more about them than what I have read in the farm papers, I would like to have your views on the matter. Are conditions in this section favorable to them? Will ordinary sheep fence turn them? Best age to buy; about price; lot of say 25 head; amount wool they shear; its worth, increase in kids per year. Will they cross on sheep? Demand for Angora venison, &c., &c.

Caroline Co., Va.

C. B.

In our July, October and December issues of last year we published a considerable amount of information on Angora goats, to which issues we refer our correspondent. We believe that there is a field for this kind of stock in this State, and that they would do well here in any part of the State. You will find them advertised for sale in our columns, and a letter to our advertisers will give you the prices at which they are selling. These run all the way from \$10 to \$50. A good sheep fence will confine them. The wool is always in demand at from 15 to 50 cents a pound, according to quality and length and fineness of staple. We would purchase young goats and breed up a flock. They will not cross with sheep. There is not any demand for Angora venison as such, but it sells well we are told for lamb. If our correspondent has not the issues of the *Planter* referred to, we will try to find them for him if he desires.—ED.

Clover Seeding.

I would be glad to have discussed through the columns of your paper the best methods of getting a stand of red clover, as adapted to this section.

Fall, winter, or spring sowing? Is it best to harrow in seed? With or without nurse crop? What do you think of early spring sowing—covering seed lightly and sowing rye at same time as a protection against sun—the rye to be grazed or cut for hay when ready? How would this combination do for August or early September sowing?

I believe the salvation of much of our farming land lies in the cultivation of clover and other legumes, and therefore merits our most careful investigation. So let us have a full discussion of the subject and the opinions and experience of our up to date farmers.

I would also be glad to hear the best methods of preparing a clover crop for the huller. Best time to cut and cure.

Culpeper Co., Va.

A. G. PARR.

Your land probably needs lime. Clover will not grow on acid land, and this is probably the condition of yours. Render it slightly alkaline by using 25 bushels of lime to the acre. The clover microbes cannot live or work in acid soil. We believe more clover seed is lost by not covering sufficiently where the land is in suitable condition for its growth than from any other cause. We always harrowed it in lightly and rarely failed of a stand. In another part of this issue (Work for the Month) we have given our views as to seeding grass and clover with grain. We are opposed to the practice in this climate. Try the lime and seed alone in the fall, or if not ready, then in the spring. We think you will succeed. We shall be glad to have the views of our readers on the hulling question.—ED.

Alfalfa,

Can we grow alfalfa here on a well-drained red clay soil? No lime in our soil here, but we can grow red clover. We have made a crop of corn, wheat and buckwheat on the land, and now wish to seed it to alfalfa. Please give us your advice as to seeding it.

Grayson Co., Va.

P.

Yes, alfalfa can be successfully grown all through the South if the proper conditions for its culture are observed. It requires rich sound land with a subsoil into which the roots can penetrate, and must be free from weeds, which are the greatest trouble with which it has to contend in the South. In all sections except the mountains, it should be seeded in the early fall. The best preparation for the crop is to spend the summer months in preparing the land intended to be sown, and in killing out all weeds by constantly bringing the seeds near the surface, and, as soon as they have commenced to grow, destroying them by cultivation. Then in August give the land an application of 300 lbs. of bone-meal to the acre, harrow in and seed; or the land may be well prepared and 300

lbs. of acid phosphate or bone meal be applied and be seeded with cow peas. This will smother the weeds. After the peas are cut off for hay, cultivate lightly with a harrow or cultivator and sow the alfalfa. In your section, the crop should be sown in May or June.—ED.

Green Crops for Hogs—Sick Hogs.

I have five pigs ten weeks old which I wish to make average 200 pounds at killing time. Propose sowing three acres in oats and Canada peas, as this is the earliest green feed I can get for them to graze on. During summer they can have cabbages, squash, melons, etc., and September will be turned in a pea field. Would it be reasonable to expect 200 pounds each with such feeding? The same pigs are at present broken out with small sores all over; their hair looks dead, yet they eat heartily. What is the probable trouble with them? What kind of medicine do they need?

Many farmers have lost fattening hogs this season through this section. They seem to take almost instantly sick with a cough, hard breathing, very rapid as though choked, and never eat anything scarcely, and after a day or so of sickness they die. What do you think the trouble is? Three lots of those killed on being dressed were found to be full of little worms about an inch long. They are principally around the kidneys, though some were found in the livers. Those so affected throve very poorly in the pen, and in most cases were weak across the loins. Is there any tonic which if given would kill such parasites?

Mecklenburg Co., Va.

A SUBSCRIBER.

It is impossible for us or any one else to say that hogs will make any particular weight on certain feeds within a certain time, but thousands of hogs fed largely on green crops and only finished with a little corn, make every year the weight you suggest before they are a year old. You will, however, need to supplement your peas and oats with some other crop to carry the hogs to September, when the peas are ready. Canada peas and oats make a fine grazing crop when put in early enough (they ought to be sown before the middle of this month at the latest); but the period of their usefulness ends as soon as the hot weather sets in. They cannot stand heat. You should plant some sorghum and corn to come in for use in July and following months until the peas are ready.

As to the sickness of the little pigs: Give them a little sulphur in slop feed, and keep them warm until it has worked off.

As to the worms: These should be expelled by giving them a little turpentine, say a spoonful per hog, in slop feed, followed with some Epsom salts in the food to carry off the worms. It is impossible for us to say from what the hogs died; probably from some form of disease of the digestive organs or obstruction of the bowels.—ED.

Fertilizer for Garden Crops—Lettuce.

I would respectfully ask your opinion as to the best fertilizer to use on garden truck, especially lettuce, and as to the application of nitrate of soda as a top-dressing. When so applied, should it be covered by earth, or simply put on top near the plant?

Cumberland Co., N. C.

H. J. McDUFFIE.

The best fertilizer for all garden and truck crops is rich farm-yard manure. This tends to keep the soil full of humus and vegetable matter, without which it is impossible to grow good vegetables. The soil can scarcely ever be made too rich for truck crops, as unless grown quickly they are never of good quality. Farm-yard manure can be profitably supplemented by fertilizers especially rich in nitrogen, like nitrate of soda, blood, cotton seed meal and tankage. Nitrogen tends to induce quick and abundant leaf growth. The cruciferous crops, like cabbages, also call largely for potash, as also do Irish potatoes. In fact, nearly all the vegetable crops require an abundant supply of potash in the soil. The cereals, like corn, call also for phosphoric acid. For lettuce, a fertilizer having about 6 per cent. ammonia, 5 per cent. phosphoric acid, and 8 per cent. potash, is about right. This may be made up of 300 lbs. nitrate of soda, 800 lbs. cotton-seed meal, 600 lbs. acid phosphate (13 per cent.), and 300 lbs. muriate of potash—to make a ton.

Nitrate of soda need never be plowed under. It is as soluble as common salt, and will soon melt and find its way into the ground.—ED.

Tomato-Growing.

Will you kindly write an article on tomato-culture? 1st. The character of soil best adapted. 2d. The best seed to be used. 3d. The preparation of the land. 4th. Which is best to use, fertilizer or manure?

We have a new cannery and a number of farmers in this neighborhood are anxious for the information.

King George Co., Va.

H. T. GARNETT.

We will write fully on this question of tomato growing in our next issue. Meanwhile, we would say that the best land for the crop is a light loamy soil, which should be deeply plowed and finely prepared. The work of getting the land in order should be undertaken as soon as ever the land is dry enough to work, so that by 1st May it may be in good order and nicely warmed, that the plants may start off freely. The hot-beds in which to raise the plants should be got ready this month. They should be made up as for striking sweet potato slips. Do not sow the seed until a nice gentle bottom heat has been developed, cover the manure with about 3 inches of loamy woods earth. Sow the seed in this not too thickly about the first week in March for the earliest plants. Stone, Beauty, Acme and Trophy are good varieties for canning purposes.—ED.

Hen Manure.

Having gone into the poultry business on a small scale, something like 260 chickens, and by gathering the droppings once every week, I believe in one year's time I will have a large pile of hen manure. I would like to use this on my wheat in the fall.

1. Is this the crop to use it on? Wheat and corn, are the principal crops here in the northern part of Virginia.

2. How would you keep it from heating? At the present time I am mixing kainit with it, but do not know if this will prevent it from heating. Wanted this fall to take one part hen manure, one part potash, one part acid phosphate.

3. Will this make a good fertilizer for wheat and grass?

4. Will you tell me a better way to use my hen manure? People tell me it is a very rich manure, but have never been able to realize much out of it.

Shenandoah Co., Va.

N. D. HITE.

Hen manure is rich in nitrogen with a small percentage of potash and phosphoric acid. It should be gathered up regularly once or twice a week and be stored in barrels. Kainit, or acid phosphate, or plaster should be dusted over it under the roost every day or two, and this will prevent the nitrogen from being lost. It should be kept moist, not wet, in the barrels or it will be difficult to handle when wanted, as it dries into very hard lumps. Being rich in nitrogen, it is more suited to vegetable or forage crops than wheat. It lacks the phosphoric acid and potash which the cereals call for. If used for wheat it should have three or four parts of acid phosphate to one of the hen manure applied with it. The mixing of kainit with the manure as it is gathered will supply the potash needed. Used in this way it will make a good wheat fertilizer.—ED.

Budding Peaches.

I want to bud some peach trees next June. Will you please tell me when to cut the buds? Please answer by mail or through the columns of your journal for February; and by so doing, you will greatly oblige

Monroe Co., W. Va.

J. H. DAVIS.

The buds must be cut from a shoot of this year's growth. The shoots containing the buds should be cut when so mature as to be rather firm and hard in texture. They are usually in the best condition after the terminal bud has formed.—ED.

Holstein-Friesian Associations.

Have there ever been two Holstein-Friesian Associations in America? If so, did one fail?

Nottoway Co., Va.

SUBSCRIBER.

There was at one time a Western Holstein-Friesian Association, which was organized on October 28, 1891, and held its first annual meeting at Marshall, Mo.; but this was consolidated with the Holstein-Friesian Association of America in the spring of 1898. Mr. F. L. Houghton, of Putney, Vt., is secretary of this Association.—ED.

Trucking, Garden and Orchard.

WORK FOR THE MONTH

Not much can be done in the garden or truck field this month in the way of planting crops, but much may be done in the way of getting the land into condition for planting, and in applying the manure and fertilizer necessary to ensure good crops. The point we have emphasized in "Work for the Month" in the Farm Management Department is equally as necessary here, yea, indeed, more necessary if that be possible, and that is, the more perfect preparation of the soil for the crops before planting. Plow and re-plow, harrow and re-harrow, if you want to secure the best results. In no other way can the inherent fertility of the soil be made available, nor can the plant food supplied in the way of manure and fertilizer be otherwise made to give the best results. Get out the barn-yard manure on to the plots and do not be sparing in its application. A hundred loads to the acre will not hurt the crops, and this may be supplemented with 500 lbs. of acid phosphate and 100 lbs. of muriate of potash per acre. Spread the phosphate and potash on the barn-yard manure and work all in together. These fertilizers are better applied now than at the time of planting the crops, as they require time to become available as plant food.

The crops which may be planted in this month, in Tidewater Virginia and Eastern North and South Carolina, are English peas and Irish potatoes. In other sections of these States, and the States West and North, March is soon enough to get in these crops.

English peas are very hardy, and even a sharp frost will not hurt them much. They should be planted in drills 2 feet 6 inches apart, and be given a cover of 4 or 5 inches of soil. Scatter the peas in broad rows, and tread into the soil before covering. The early smooth varieties are the hardiest, and should be first planted. If the land needs additional fertilizer (though it is not well to make land too rich for peas, as it tends to cause them to run to vine,) apply acid phosphate and potash, say 300 lbs. of phosphate and 50 lbs. of potash.

The planting of Irish potatoes in this month is always attended with some risk, as they are very susceptible to damage from late frost, and, when once cut off, rarely make much yield, but the price of the earliest potatoes is always a good one, and it is worth while to take some risk. Commercial fertilizer usually makes a better yield and sample of potatoes than farm yard manure. Manure has a great tendency to make the potatoes scabby. The spores of the disease

causing scab are often present in manure. A good fertilizer for Irish potatoes may be made up of—

300 lbs. nitrate of soda.
600 lbs. cotton seed meal or fish scrap.
800 lbs. acid phosphate.
300 lbs. muriate of potash.

2,000 lbs.

This may be applied at the rate of from 500 to 1500 lbs. to the acre broadcast, If less than 500 lbs. is applied per acre, it may be put in the rows, but must be well mixed with the soil before planting the sets. Open the rows 2 feet 6 inches or 3 feet apart and drop the sets 12 to 15 inches apart in the rows. The sets may be if cut large, so as to leave two or three eyes on each piece. Cover to the depth of 4 or 5 inches. The crop should be cultivated with a harrow or weeder before the plants come through the ground to kill off weeds and open the soil. Cultivate frequently and keep level.

Small sowings of lettuce, radishes and other early salads may be made in sheltered spots.

Hot beds should be got ready for raising tomato, cantaloupe, melon, egg and pepper plants, and for striking sweet potatoes. Make up the beds and cover the manure, which should be fresh horse litter and leaves with 3 or 4 inches of soil, but do not plant the seeds until the first hot fermentation of the manure is over. What is needed is a gentle steady heat.

Spinach and kale may be seeded towards the end of the month. These crops should be sown in rows where they are to complete their growth and not in seed-beds. If the weather is very cold, March is soon enough to sow them.

Cabbage seed may be sown in frames for plants to set out to follow the fall sown crop.

Asparagus beds should have attention. They should be worked over and covered with manure and soil to the depth of 10 or 12 inches. New beds may be made and the plants be set out this month and the next. In making the bed, plow out the soil as deep as possible in the line of the rows, and then in the bottom of this deep furrow spread 2 or 3 inches of good soil and set out the plants 12 or 15 inches apart. Cover with 2 or 3 inches of good soil, and make firm over and around the plants. The rows should be not less than 6 feet apart, so as to provide for plenty of soil to cover the beds the second year.

Don't delay ordering your seeds and fertilizer until time to plant the crops. If you do, you are pretty sure to have to wait for them, and thus miss the best time for planting.

GARDEN AND ORCHARD NOTES.

Editor Southern Planter :

Start the pruning implements now. What tools should I use on the vineyard and in the orchard? A pair of lopping shears and a pair of ordinary hand shears will do the work in the vineyard if moved by the hand of an intelligent farmer. For the orchard, a small hand saw, in addition, will be all that may be needed. You can buy these of most large nurserymen and seedsmen, who advertise in the *Planter*. But how shall I prune? Why should I prune? Whole books could be written in answer to these two questions. No one should prune who cannot give a good reason for each operation and tell what the results of each operation will likely be. This rule will exclude the mere mechanic from fruit plantations. Fruit trees and vines should not be cut because the tools are sharp, nor for the sole object of permitting cultivators to go through the orchard more readily. Each vine and each tree presents a separate and distinct problem to solve before pruning. It requires as much brains to manage a pruning implement properly as it does to read Blackstone intelligently. The time has arrived in the Old Dominion when many people believe it. But the State needs many more just such believers. Training is quite a different thing from pruning. We prune in order to train. Therefore, we should have a well settled idea of training before we attempt to prune. In pruning the grape, it is well to remember that the fruit is borne in a few clusters near the base of the growing shoots. These growing shoots come out from wood of last season's growth. Thus it can readily be seen that the amount of fruit a vine will bear can be easily controlled by intelligent pruning. The shoot that grows out from each bud will usually bear from three to four clusters of fruit. Forty buds left on the bearing canes will produce about 150 clusters of good sized fruit. Strong vines will carry more and weaker ones fewer. What system of training is best? That depends upon the species or variety you are growing, and also upon what system you like best. After testing a number of the systems, we like the Munson system for several of the long caned species, and some modification of the old Kniffin system for the shorter vined varieties, like many of the *Labrusca* species. The bearing wood should be kept as near the ground as possible to hold the vine in manageable limits, to facilitate spraying and to make the fruit easier to gather. After pruning, we like to have the bearing canes tied to the wires almost in a horizontal position, so that the sap will be distributed as evenly as possible to all growing shoots. About three or four spurs with two buds each should be left near the main trunk for bearing canes next year.

For more exhaustive discussion of this subject, send postal card for Bulletin No. 48, Texas Experiment Station, College Station, Texas, and Bulletin on the Grape, published by Virginia Experiment Station, Blacksburg, Va. These bulletins should be in the hands of all grape growers of the State. They may be obtained if the editions are not exhausted.

* * *

Commence pruning your trees this month, for fear you may put it off till the sap starts and much damage may be done when the bark slips. During my travels over the State, I notice a very large number of fruit trees planted out with the tops unpruned. They are frequently left to grow with the same switch-like top they usually have when taken up from the nursery where they grew in a crowded condition. This crowded condition made the young trees push their tops up in a tall and slender manner. The nurseryman usually encourages this form of growth to meet the erroneous popular demand for the tallest young trees. The conditions are entirely changed for the young tree's growth in the orchard. Nature will usually try to correct this slender top herself by pushing out thrifty sprouts lower down. These young and thrifty sprouts will usually grow faster than the older top growth, and thus make a very ugly and undesirable top. We usually prefer well-grown, one-year trees, so that we can cut the top back within two feet of the ground for most apple sections of the Southern States. The side buds usually push out readily when growth starts, and, by a little early summer pinching, we can usually start the top according to our own ideal the first year. We like the low vase form of top, with stout spreading branches. The trees are easier to spray, the fruit more readily gathered, and the wind does not do so much damage to the tree and fruit.

Limbs that cross and are likely to rub each other, should be taken out early. The top should be made open and spreading to carry a heavy load, and let the sunlight and air enter freely to give color and size to the fruit. Slender limbs should be cut back to keep them from bending down too much and to cause them to branch. When limbs are cut off at the trunk, the operation should be performed just outside of the collar, and the cut surface be made parallel with the main body of the trunk to facilitate the healing over of the wound. If pruning be intelligently done each year, it will rarely be necessary to cut a limb off the main trunk over one inch in diameter. White lead paint is an excellent thing to put on the cut surface to keep out disease germs and to facilitate the healing over of the wounds.

These general remarks apply more specially to such pomaceous fruits as the apple and pear, where the

fruits are borne on spurs that grow out all along the older limbs. The peach bears its fruit quite differently. In this instance the fruit is produced from buds that are borne directly, nearly always, on one-year-old wood. If all this wood is cut off, there will be no peach crop the following season. We like to prune off about one-third of the previous year's growth. This lessens the number of fruit borne, and, accordingly, causes the limbs to branch more, lessens the tendency of the limbs to droop down and split off, causes the tree to make more bearing wood for next season, and increases the size of the remaining fruit. Go out into the orchard and bring into the house some apple and peach twigs. Notice the difference between an apple bud and a peach bud. Learn the prospects of a fruit crop the coming season. Teach the boy the difference between a fruit bud and a leaf bud. This may give him his first lesson in nature study and start him in the study of horticulture. The State needs him.

For further study along this line, write for Bulletin No. 58, on Pruning and Training Peach Orchards, Texas Experiment Station, College Station, Texas, and also the Bulletins on Pruning Orchards, published by the Virginia Experiment Station, Blacksburg, Va.

* * *

Make preparations now for war on injurious insects and fungous diseases. Order a good spraying outfit. Some good machines are advertised in the *Planter*. Order a supply of bluestone to make Bordeaux mixture. This may be ordered from your local druggist. You cannot afford to share your crop of fruit with insects and diseases. The bitter rot has done immense damage to Virginia apple crops, and it is almost sure to be ready to begin work again this coming season. While pruning your apple orchards, notice very carefully for cankered places on the upper sides of the limbs. Disease producing spores come from such places, and cause bitter rot of the fruit. Cut out all such limbs at least twelve inches below the infected places, and burn them. Take off all dried up fruit still hanging on the trees, and burn these also. Prepare to give the orchard a good spraying with Bordeaux mixture before the buds swell. Begin work on pear blight. Cut out all affected limbs in the same way, and burn them. The effectiveness of this work will depend largely upon the thoroughness with which it is done. If one single tree with diseased wood on it is left in the orchard, a number of trees near it may be seriously affected from it. If all diseased parts are cut out and destroyed early in the season, and this work be followed by a good spraying with Bordeaux mixture before the buds open, more than half the battle has been won.

* * *

Give all garden soil a good, deep plowing as soon as possible. A freeze will do more in one night in helping you to put the soil in a fine mechanical condition than many days work with harrows. The advice in regard to early plowing, especially on heavy clay soils, frequently given in the *Planter*, is good. It will give the old pea vines, grass and weeds, a chance to make manure for the crops. Are you hauling out all the manure from the barns during these lengthening days of February to save time for pressing spring work?

Have you decided upon the best varieties of vegetables for your locality? Write a postal card to several seedsmen for seed catalogues. T. W. Wood & Son, Richmond, Va., and Geo. Tait & Sons, Norfolk, Va., publish valuable seed catalogues. You may learn something valuable by reading them. If you want any of Uncle Sam's garden seeds, write to your Congressman for them. These politicians will be glad to send them, but I cannot vouch for the satisfaction they will give you.

* * *

The annual report of the Commissioner of Agriculture of Virginia for the year 1902, is before me. Have you received a copy? If not, write for it. The report contains some interesting information. The illustrations of the San Jose scale insect and bitter rot of the apple will interest our orchard friends. We hope the Commissioner will permit us to make a few friendly suggestions. While we realize the difficulties under which the Commissioner has labored—such as the limited use of the money at the command of this department and lack of facilities—still, if the Commissioner desires this general style of report, would it not be better for Virginia farmers and Virginia horticulturists to write more of the articles for this report instead of gathering them promiscuously from various States and taking a number of second hand ones? It seems to me this would more readily meet the conditions confronting the average Virginia farmer. While it is true that science is the same the world over, still, the correct application of scientific principles will depend upon the peculiar conditions that characterize each locality. We like reports concentrated upon one subject—such as one upon beef in Virginia, one upon apples in Virginia, one upon blue grass in Virginia, one upon sheep in Virginia, one upon trucking in Virginia, etc. Let these reports be made as exhaustive as possible. They would be handed down from one generation to another as standard works upon each topic. The reports would become reference books in the Old Dominion. While I may seem to be too critical, still, it seems to me that the same mistake is being made at the Test Farm. Too wide a scope of work is being undertaken for the force and the means at

hand. Many Experiment Stations made the same mistake in the beginning, in order to meet what was thought a universal demand for general information. Many of those Stations had to begin over and specialize. Some have never gotten over the A, B C's along this line yet. Consequently, there is always some "hindering cause" that prevented conclusions. Let me urge the Commissioner to specialize more, both in his reports and on the Test Farm. The best reports that I have seen along this line are published by the Secretary of the Board of Agriculture of Kansas. I am reliably informed that the State has made marvelous progress, both in stock husbandry and in general agriculture, since these reports began to be published.

* * *

What a great pity our Commissioner of Agriculture was made elective by popular vote. Agriculture is certainly broad enough for any man without being forced to build political fences. The politician "got in a little of his work" on this law while the friends of agriculture least expected it. These latter sentences have no reference whatever to the report in question, which we believe is an improvement upon several previous reports, nor to the Commissioner. The Department cannot be made what it should be under this law. The man with industrial training and scientific learning does not fit in with the politician. The industrial man is coming to the front in Virginia now. A revolution along this line is silently taking place. This law will be changed, because it is a step backwards. But the farmers must look after their representatives more closely, and vote a little with the postage stamps.

R. H. PRICE.

Montgomery Co., Va.

SWEET POTATO GROWING.

Editor Southern Planter:

This is a good time to form new resolutions and make out a plan of campaign for the year. Probably I can drop a word to others who may profit by it.

First, let me just say a word about sweet potatoes. They are the best crop I know of to raise on poor land. Because you can do as I have done for several years, raise 300 bushels per acre, and on as poor a *gall* as existed in this old State. Plow land deep in the fall. Do not harrow, let it stay rough, to crumble all winter by the repeated freezing and thawings, crumbling and disintegrating all winter. In the spring harrow early and destroy weeds, if any sprout thereon. Then in May after repeated harrowings, plow again and harrow again, to destroy weed seeds.

Then about May 15th take your big plow and open big furrows, four feet apart, running twice in the row.

Fill the trench so made full with good, well rotted manure, and put a bag (200 pounds) of tobacco fertilizer on the top of the manure; cover with two furrows, making a good cover of earth on the top of it. Then harrow longways, to bring it down nearly level. Then either roll or drag a slab longways, to smooth the top. If a rain comes run a weeder to prevent baking. Now you are ready to set slips. Set your slips out small, don't wait until they are a yard long to sap the potato in the bed, six inches will do very well. After setting (I always wait for a season) and after I get the slips started, I work crossways with a weeder, which makes them just jump up and grow. I pulled out only 7 in 8,000 plants last year. Don't be afraid to work them. A garden rake beats a hoe every time to work a garden with. Keep the ground loose on top. Use the Iron Age Cultivator in the rows often, and beyond all things keep your crop clean until the plants commence to run, when they will smother the weeds themselves. I always set slips 15 to 16 inches apart, which is about right.

About digging. Sweet potatoes grow until a frost hits the vines. I always await a frost myself. Still they can be dug earlier. My sweet potatoes are put away in boxes in my basement, where I keep about 50 bushels for seed, selling at \$1 per bushel each spring. They should be kept, not too warm and not too cool, but at an even temperature of from 50° to 60°, if possible. If too warm they sprout badly; if chilled, they rot.

When fed to stock, I know one bushel of sweet potatoes and two of corn will beat three bushels of corn, as I have often proved to my entire satisfaction. All corn is too heating to keep a hog, steer, or sheep in good health, whilst fattening, and the one third sweet potatoes makes the animal enjoy his corn the more. Any root will act the same, but sweet potatoes fatten as well, for I fattened a large beef with sweet potatoes alone one year, and have often fattened hogs on them.

Now, in conclusion, let me say I can raise as many sweet potatoes on one acre as I can corn on 8 or 10, and that land will produce a fair crop of wheat the following year, and grass as well, if the manure is properly worked out and scattered by repeated harrowings and re-harrowings, and the ground be put into good order for a grain crop. I have raised 20 bushels of wheat after my sweet potato crop, and you, brother farmers, can go and do likewise. But I put work on that sweet potato patch. One hundred dollars would not buy my crop when I dig it. Have you an acre to pay more, even in tobacco? I don't want to ride my hobby to death nor do I want to tire others, but I want all to try a sweet potato patch and report.

My potatoes have an extended redigree, probably, but all I know of them is just this: A lot were in

my cellar when I came here eight years ago, and I have the same kind yet, with some additions now and then from a good neighbor who gave me two or three potatoes, and I put them in my hot bed because they tasted so good when roasted of a cold winter's day or night. My potatoes are some big, some little, from eight pounds to one pound, every shape, size and color. I pick them as I feed them, and always put good-shaped ones not too large or small into my hot-bed for slips.

Yours for Sweets,
Goochland Co., Va. W. ELLIOT HAMMOND.

NOTES ON VARIETIES OF APPLES AT THE AGRICULTURAL EXPERIMENT STATION, BLACKSBURG, VA.

[EXCERPT FROM BULLETIN 130.]

Editor Southern Planter:

The Horticultural Department of the Experiment Station is issuing at this time a second series of bulletins dealing with the Experiment Station orchards. This series is entitled "Orchard Studies," and the third number discusses some of the more important varieties of apples growing in the test orchards. Thirty-two varieties are discussed in the bulletin; six summer varieties, nine autumn, and seventeen winter varieties. The bulletin is too long to be reproduced in one issue of the *Planter*, hence the more important details are condensed and presented in advance of the official publication for the benefit of the readers of the *Planter*.

While, as shown in the official publications, the orchard studies deal with both scientific and practical matters, the chief object of the bulletins issued for the farmer is to convey information that is usable in his work, hence, in condensing for the press, mention is only made of those varieties which are summarized in the bulletins as the most important. Under the head of

SELECTION OF VARIETIES,

the question is sure to occur to every one familiar with even the limited list treated in this bulletin, "What shall I plant for my purposes?" To this question the following list is suggested as in part answering the same:

For Summer.—Select, Early Ripe, Yellow Transparent and Oldenburg, as cosmopolitan varieties which thrive in all apple soils. Chenango and Summer Rose are fine amateur sorts for the home orchard. Jefferis is a promising late summer variety here, but not well enough tested to warrant distinct commendation—quality excellent.

For Autumn.—Select, Maiden Blush, Buckingham and Wagener, again fairly cosmopolitan varieties, which thrive almost everywhere. Bonum, Fall Orange, Tolman and others have special value for persons desiring fine quality, and a commercial value where they can be sold on their merits.

For Winter.—Speaking first of those which are not cosmopolitan, and must be planted with nice discretion as to soil, conditions, etc., select, Albemarle Pippin, Winesap, and possibly Lawver. For standard

cosmopolitan sorts, select, Arkansas, Gano or Via and York Imperial. As a secondary selection for quality, Grimes, Roxbury or Smokehouse may be suggested, but these are not keepers in ordinary storage.

The really interested orchardist can't afford not to try, in a small way, a varied list of old and new sorts, for otherwise he misses the finest pleasures of his calling, and gratification of his own æsthetic tastes for fine fruits, but the *Commercial Orchard must be kept clear of experiments.*

DESCRIPTIVE NOTES ON ABOVE NAMED VARIETIES.

All the varieties mentioned herein were planted in spring of 1889.

Early Ripe.—An old variety—origin, Pennsylvania. While this variety resembles in some characteristics of tree and fruit the Early Harvest, it is a decidedly superior variety at least for this district. Tree quite vigorous grower, measures at 14 years old in the orchard here 33 inches in circumference at base of trunk and 29 inches just below limbs, free from blight, and fruit free from rots.

First bloom noted in 1894, and bore few fruits in 1895, fair crops in 1897, 1899 and 1901. The fruit is larger than Early Harvest, roundish oblate, greenish yellow, quality acid, but good for culinary use and eating. The best general purpose variety of the very early sorts. It is to be regretted that it cannot always be purchased with certainty. Season with Early Harvest, but lasts better.

Yellow Transparent.—A recent but comparatively well known early variety of Russian origin. The tree is a vigorous though not large grower, and has been very healthy here. In this respect surpasses some of the other Russians. The fruit has also been entirely free from fungous diseases. After 14 years' growth, the trees measure in circumference at base 24 inches; and at point where limbs start 22 inches. The head is upright, compact. The first bloom was observed on this variety in 1893, and in 1895 it bore a heavy crop for the size of the trees. It has continued to bear a heavy crop in the fruit years of 1897, 1899 and 1901, and also has borne a moderate crop the off years. We have gathered as high as three bushels per tree. The fruit here is mostly medium in size, rarely large, although in some other parts of Virginia it grows to excellent size. The shape is somewhat conical, color light green, shading to an opalescent tint when fully ripe, and can be called a beautiful fruit. The quality is acid, but pleasant and agreeable when ripe, and may be rated as a valuable dessert variety. It is far the best dessert variety of any Russian fruit grown with us. As an early variety, and a sure bearer, it rather surpasses the other varieties mentioned in this section. It is highly commended for home use and for near-by market, where there is demand for such fruit. Season follows Early Ripe.

Oldenburg (Duchess of.)—A well known variety of Russian origin, and quite generally planted for early market and culinary purposes. The growth here is fairly vigorous, but not heavy. Thus far entirely free from blight and the fruit from rot. The trees now measure 22 inches in circumference just above the ground and 20 inches in circumference at the point where the head starts. The growth is upright, rather compact.

This variety bloomed first in 1892, and shows bloom-

ing dates from April 28th to May 2d, during the last nine years. A few fruits were borne in 1892; a fair crop for age of tree in 1895. Subsequently fair crops have been produced in 1897, 1899, 1901, and moderate crop in 1902. The fruit with us is never large, but a good medium size, striped and handsome. Quality suited only for culinary use. It is one of the very best market sorts for local sale. Season 2nd early to midsummer.

Chenango.—An old variety—origin New York State. Only fairly vigorous in growth, subject to blight, and fruit slightly subject to bitter rot. Tree at this time, after fourteen summers' growth, measures 25 inches in circumference at base and 22 inches at point where limbs start; head thick and round; growth of wood short.

Bloomed first 1893; fruited, few specimens, 1895; very fair crop in 1897; less crop 1899 and 1901. Falling off in productiveness attributed to blight. Fruit is beautiful pale green and striped with red, elongate in shape.

Quality very good; one of the best for high class dessert use. An amateur sort of the first rank for dessert and the home orchard. Highly commended for home use; does not seem to warrant commendation for commercial growing. Ripens mid season to late summer.

Summer Rose.—An old but not well known variety of New Jersey origin. The tree is a vigorous grower; forms an upright, compact head; not subject to blight, and the fruit quite free from fungous diseases. The trees at fourteen years old measure 30 inches in circumference at base and 25 inches in circumference at point where the head starts.

This variety shows its period of full bloom between the dates of April 24th and May 6th; bore a few fruits in 1892. In 1895, the trees fruited very well for their age, and in 1897 bore a full crop; in 1899, 30 per cent. of a crop; and in 1901 a fairly heavy crop, about four bushels per tree. The fruit is small to medium in size, round and very prettily marked with stripes of red. The quality is very good, especially suitable for dessert use. While the fruit is not overly rich, it has a very pleasant flavor. We consider it one of the very best early dessert fruits, but the fruit appears to be quite tender; the skin cracks easily. Ripens mid-season.

Maiden Blush.—A generally disseminated old variety of New Jersey origin, but which has merits that warrant its larger use in our plantations. The tree is a healthy, vigorous grower, not subject to blight. Measures 29 inches in circumference at base, and 27 inches at head of trunk. The habit is moderately spreading, upright, and forms a very good top. First bloom was observed upon this variety in 1893; it bore a few fruits in 1895; and a very fair crop in 1901. The largest crop has been 3 bushels per tree. This variety is acid, of very good flavor, desirable either for home use or market. The size of fruit is medium. Color, greenish with a fine blush on one cheek. To be commended for the family orchard, or for market where fruit of this class can be disposed of. Season early to mid autumn.

Buckingham.—This well known variety of Virginia origin has also been called Fall Queen, but is now rightly known as Buckingham. The tree is a fairly

vigorous grower but not large, comparatively free from blight and other fungous diseases, and the fruit is also quite free from disease here. Measurement of trees at this time, 25 inches in circumference at the base, and 22 inches in circumference at point where the head starts. Head upright, moderately spreading. First bloom noted in 1892, and also three specimens of fruit were produced on one tree, 1895, a very good crop for size of trees; and the same was true in 1897. In 1899 the trees set so full that there was slight breaking of the limbs, produced about four bushels per tree; 1901 the crop was light. The fruit is of good size, medium to large, and colors here so as to be mostly red. In quality it is excellent, and very desirable for both dessert and culinary purposes. It seems to be very good for canning. Recommended for home use, and for market where fall fruit can be disposed of. Season mid autumn to late.

Wagener.—An old variety of New York origin, but rarely met with in our fruit plantations. The tree is only a moderate grower, with well formed, open top, wood short. Trunk 21 inches in circumference at base, and 18 inches at head. Quite healthy, free from blight, and moderately so from other fungous diseases. Bore a few fruits in 1892, three years after planting; and a full crop for size of tree in 1895 and 1897; in 1899 three bushels per tree were gathered; fruit of good size and fine quality. In fact, this variety fruits so heavily it does not develop sufficient wood. In 1901 the crop was light, and also the present off year, 1902. The fruit is medium to large, roundish oblate, greenish ground, splashed and striped with red. Quality not rich, but pleasant sub-acid. Desirable for culinary use and for market. This variety is one of the most promising as a bearer of any in the list of fall apples. We have found it desirable for canning. Season mid autumn to late.

Bonum.—A well known variety of North Carolina origin. Tree fairly vigorous, but not large in growth. Comparatively free from disease, both as to tree and fruit. Size of trunk at base, 24 inches circumference; at head, 20 inches. Upright, spreading habit. The first bloom on this variety was observed in 1893; a very few fruits were produced in 1895; in 1897 a fair crop set; but in 1899 only a very few fruits were produced; in 1901, the crop was fair, measuring 2½ bushels per tree. A small but showy fruit of the very best quality. Desirable either for dessert or market. Season is late autumn at this altitude.

Fall Orange.—This is an old variety of Massachusetts origin; it is not common in the orchards and gardens of Virginia. The tree is a strong grower and comparatively healthy; measures at base, 21 inches in circumference, and 20 inches at point where limbs start. Head upright, moderately spreading. This variety bloomed first in 1893, and produced a few fruits in 1895; in 1897, a good crop, and in 1899 a light crop was produced; 1901, the trees produced 2½ bushels of fruit each, which is a full crop for this size. The fruit is medium in size, of a yellowish red color here, and fine looking. The quality is excellent either for dessert or culinary purposes. It is generally free from rot. Ripens early to mid autumn.

Tolman Sweet.—An old variety of Rhode Island origin. It is rarely met with in our fruit plantations, but is worthy of more attention, especially for the

family orchard. The tree is moderately robust in growth, forming a broad, spreading top of quite distinct and peculiar type. This variety has shown some blight, but not serious. Trees measure 29 inches in circumference at base, and 25 inches at head. First bloom was observed in 1894, and a few fruits in 1895. The trees bore a full crop for their size in 1897; and a light crop in 1899; in 1904, a very fair crop was borne, averaging about 4 bushels per tree. A very light crop was produced the present year, 1902. The fruit is medium to large, round, compressed, of a yellowish, golden color; and fairly free from disease; has shown some attack from the black and bitter rot on one occasion. The quality is rich, sweet, with a fine perfume, making it an excellent variety for preserving and other culinary uses. This apple is regarded as of special value for home made goods of above description, and should sell well for special uses where it becomes known. Season mid autumn.

Dec. 20, 1902.

WM. B. ALWOOD,
Horticulturist.

[TO BE CONTINUED.]

THE SPRING GARDEN.

Editor Southern Planter :

Winter is now upon us. Growing vegetation is almost at a standstill. This is true of a very large part of the country. But our country is so large, and climatic conditions so varied, that we must take broad views. While one section is clothed in ice and snow, other sections are enjoying strawberries and vegetables from open air gardens and fields. We have all the gradations from 72° above to 22° below. Hence, it is more or less timely to write of the spring garden, even in mid-winter; but we write rather from another standpoint.

It is always wise to look ahead and prepare for coming duties. That we may have the best spring garden, it is necessary to do much of the work now. Then, whether we live where spring comes in March or in May, we can be ready to welcome her coming, and gather the fruits of our thoughts and plans.

PREPARING THE SOIL.

This is an important part of successful gardening. The best soils for producing the most luscious fruits and the choicest vegetables cannot be prepared hastily. Time is needed for atmospheric action. For the best results, we cannot have our soils too fine, too deep or too rich. We should break them very deep. And this breaking should be done now if it has not already been done. This will enable the rains and the snows and the freezes to do their work. Their work is all-important, and we cannot do it. When we have used plows, spades and harrows, we still leave millions of little lumps or clods. These need to be broken finer. The agents of nature will do this when we have prepared the way by doing our part. Aeration requires time.

MANURING AND FERTILIZING.

Manuring is putting on vegetable matter and animal voidings to rot in the soil. It takes time for these to become thoroughly incorporated with the soil and to become soluble in water. They should be put on as early as practicable, and mixed in with the soil. Then they will decay. In so doing, they start fermentation. This assists aeration, and the two working together, get the plant-food in soluble form, ready for use by the plants. But when we have done this, we do not always supply all the elements of plant-life needed, neither do we give them in proper proportions. This is very important.

One of the most important elements in plant-growth is potash. This enters into the composition of all plants. It gives health to the plant, and strength to do its work. This element is very abundant in nearly all garden crops. It is especially needed for all those crops which have numerous seeds, and also for crops which are liable to fungus diseases, such as rust, wilt, etc.

Most soils are deficient in this element. Hence, it is very important to supply it. German kainit and muriate of potash are the cheapest and most reliable of the sources of supply. These should be used liberally on garden and truck patches. Phosphoric acid is also needed. This we can get from superphosphates and bones. The nitrogen is usually supplied from the manure and vegetable matter.

PLANTING.

Having made the soil rich and warm, we can begin planting quite early. There are many vegetables, such as radishes, lettuce, mustard, turnips, onions, salsify, and so on, which, in many sections, grow all winter. These can be planted early. Irish potatoes can be planted in all the South any time you are ready. Put them in rather deep; cover with rotting straw or leaves or other decaying vegetable matter; then throw on soil as deep as you think best. As spring approaches, rake off the crust with a light harrow.

We do not propose to enumerate here what you can plant. Your locality and the seed catalogues will help you to decide. But be sure to be ready to have an early garden. This contributes so much to the happiness of the family, and brings an income at a time when cash is scarce. A garden may be ever so large, or ever so small. But be sure to have a garden.

Atlanta, Ga.

JAMES B. HUNNICUTT.

To winter twenty animals on the food that would give best returns if fed to only fifteen, is poor policy. Although the twenty might not starve, the extra time required for them to regain their normal condition would prove the experiment a sorry failure.

Live Stock and Dairy.

DEVON CATTLE.

Editor Southern Planter :

We see a great deal written in the stock journals of the country about beef and dairy breeds of cattle, and also the "general-purpose," or farmer's cow, but we seldom see anything said about one breed—the Devon—one of the oldest breeds in the United States, and one which we do not think has yet outlived its usefulness. Whilst there is so much written about the Red Polls, Holstein, etc., as "general purpose" animals, we are sure that if there is a breed of cattle worthy the name of "General Purpose" the Devon is that one. We believe in the "general-purpose" cow. She is not a myth by any means, as some writers seem to think. When the good qualities of the Devon for beef, butter and milk are taken into consideration, the breed will be found among the stayers, and will always leave its mark. Now that "baby" beef is so much in demand the Devon is certainly in the race, for they fatten well at any age. The flesh is well marbled, and they kill well with less loss in offal than most breeds. Whilst we do not claim that they are as large as the stately Shorthorns or Herefords, they are a medium size. Steers at two years old, weighing 1,725 pounds, when well fattened. The fat does not lay in lumps, as we see in some of the other breeds. Bulls of this breed weigh 1,700 to 2,100 pounds. Cows 900 to 1,500 pounds. The steers grow rapidly, and are always hearty, and while their weights are not as large as those of the other beef breeds, they are plenty large enough for the general market for a large portion of our country. In a hilly country where the feed is not so abundant as it is in some of our Western States, this breed does well, and even in the West they make their mark. We quote from an English writer: "The Devon breed has been traced from the earliest period when its existence was scarcely known beyond the then remote county from which it derives its name, and it having been shown how a small band of farmers, justly proud of their native breed, by their own exertions sustained its purity and carried it triumphantly through a critical period until at length its own intrinsic merits attracted the attention at first of a few discriminating judges, and finally of the general public, leading to its introduction into various parts of Great Britain, Ireland, France, Jamaica, Mexico, Australia, Canada, and lastly, in the United States. A breed whose native home is a bleak, hilly district several hundred feet above sea level. Flourishing as they do there, it is not surprising that they maintain their reputation when transplanted to a richer soil and milder climate."

Another writer says of the Devon: "In all points the Devon is the finest formed, most blood like and active of cattle. He is to his congeners what the Arabian is to other horses." Another writer of experience says: "I find Devon cattle the most profitable breed in America, and can raise more valuable beef on them with the same amount of food than on any other breed."

We quote from a South Dakota ranchman as follows: "I am thinking of buying Devon bulls to turn on the range with Shorthorn cows. Shorthorns are too large and slow for the short grass country. Herefords I do not like, and Angus are shy breeders. Devon cows will last two or three years longer on the range than Shorthorns, and always be in better fix. They have proved to be the best of breeders with a good calf every spring. The steers are good ones. This is a short grass and a short feed country, and we want something that can get a hustle on. Some of our farmers here milk their cows and I think Devons would suit them."

A South Carolina breeder says of the Devon: "My experience and observation of the Devon steer leads me to think that they are far superior to any other breed of cattle for beef purposes. They are far more thrifty and docile than any cattle I have ever seen, and can be fattened on one-third less feed than is required for any other breed of cattle. They are particularly hardy and will thrive where others would almost starve."

The dairy qualities of the Devons are not lacking. A Pennsylvania breeder says: "My cows give six times their weight in milk per year. Such an animal should not be despised. I have not bred for quantity, but rather for quality and uniformity. All my cows have the wonderful staying qualities that stamp the Devon breed the world over." Mature cows of the Devon breed yield from fifteen to twenty quarts of milk per day, testing from 4 to 6 per cent. butter fat. One ten-year old heifer has a record of 7,000 pounds of milk and 423 pounds of butter for her first year. She is now nearly dry and in perfect beef condition. Her dam has a record of 453 pounds of butter per year, and her grand dam has a record of over two pounds of butter per day, showing that this cow is no sport.

We quote once more from a large breeder of Devons and Shorthorns in California (he has over 100 head of Devons) as follows: "From here southward is a dry country, and we find the Devons do better than any other breed where they have to go a long distance to water. We have sold very few Devon heifers, as it is

our intention to increase our herd. Our bulls find ready sale all over the coast. The Devons are not only an excellent beef breed but are also great milkers."

The above experience of those who have handled other breeds besides Devons goes to show that they are certainly a general-purpose breed of cattle. They are good for beauty, beef and butter, three B's that are hard to beat.

Newark, Ohio.

L. P. SISSON.

BLACK-LEG IN CATTLE.

Editor Southern Planter:

I saw an article in a Blacksburg bulletin claiming that black leg in calves was a germ disease. I don't agree with them. I bought some yearlings and put them on blue grass, and salted every day for 5 days. One died and another went lame. I bled the one that was lame, and skinned one that died, and found that the blood had settled in one leg and neck. I moved them to a field that was short grass, and lost no more.

2. My neighbor had over a hundred yearlings in the woods and lost nine, supposed black leg to be the cause. He said that he knew it was not for the want of salt, for he had two men salting every day. I told him that the salting was what was killing them, and he quit salting and lost no more. Last fall in dry weather some of my neighbors salted their yearlings every day, and several died. Water was scarce, and, after the cattle drank water, they had strong appetite and eat very heartily, and, having very rich blood, lay down and died. The blood would settle in some place and that caused death.

V.

We referred the foregoing to the Blacksburg authorities for their comment. Below is their reply. We agree with them. Black-leg is undoubtedly a germ disease, and salt has nothing to do with it.

"The party from Warm Springs, Va., has no knowledge of the nature of the highly infectious disease, black leg in cattle, or else he could never have made the foolish statement that the disease was the result of cattle being allowed to have sodium chloride (common salt). Nor has he a knowledge of the action of the salt on the healthy animal.

When I tell you that I have sent out from this Station a vaccine, which is prepared by the Bureau of Animal Industry, Washington, D. C., and is made from the muscular tissue of the animal which has died from black leg, thus containing the germ, in an attenuated form, and that this vaccine has so successfully prevented the disease in cattle in this State that the farmers have written for and obtained over five thousand doses of this vaccine during the last four months, which they have used with the satisfactory result of preventing the outbreak of blackleg, you will doubtless see that we do understand the cause of the disease, and are not simply guessing at it."

J. G. FERNEYHOUGH,
State Veterinarian.

Blacksburg, Va.

THE STATUS OF ABERDEEN-ANGUS CATTLE.

Editor Southern Planter:

Those fortunate enough to be able to visit the last great International Live Stock Exposition, were struck, in the first place, with the vastness of the show; and in the second, by the uniform high quality of the numerous exhibits. A really *poor* animal was hard to find. Taken altogether, it was simply a mass of grand individuals of the horse, cow, sheep, and hog kind.

To see the draft horse show alone was well worth a thousand-mile trip, while in the cattle classes, the show was grand beyond conception. The long rows of fine breeding animals led one to *wonder* at the vast improvement made in the several beef breeds, even in the past ten years.

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

This victory was the more remarkable because of the great inducements offered by the other breed associations—one of which offered \$1,000 for the grand champion car lot should it fall to their breed. In the sales of these, both single animals and car lots, the Angus again demonstrated the fact that the breed was at the top in the estimation of the butchers—the champion steer selling at 56 cents per pound; champion car lot at \$14.50 per hundred gross.

From Chicago the writer made a trip to Channing, Texas, and visited Mr. Boyce, manager of the X. I. T. ranch, the largest in the world.

He there raises all three breeds of beef cattle—each breed in separate pastures—and all given the same treatment. Speaking of the qualities of the different breeds, Mr. Boyce said: "I wish all of our cattle were the Angus, as the Angus feeders always sell first. We never have to keep our Angus steers until three years old, but have a good many of the other breeds of that age; generally sell all the *Angus* steers as calves and yearlings. I spent a pleasant week at the ranch, and brought home five cars of two year-old *Angus heifers* as souvenirs. No one in the 'Pan Handle' has a word to say against the 'doddies,' but every one who is so fortunate as to own a black herd, speaks in the highest

terms of them; and it must be remembered that the Angus bull was unknown on the range twelve years ago."

Taken altogether, I believe the Angus breeders have every reason to congratulate themselves upon the achievements of their favorite breed, and are in position to shake hands with themselves, and

"Hurrah! for the doddies;
With their glossy black bodies.
Hurrah! for the doddies! hurrah! hurrah!"

Rockingham Co., N. C.

A. L. FRENCH.

DAIRYING IN SOUTHSIDE VIRGINIA.

Editor Southern Planter:

As I frequently get letters asking what I consider the proper management of and feed for cows in order to make them profitable, I concluded that I would write a short article giving my experience with Holstein cattle at the Grove Stock Farm, Nottoway county, Va. It may be of interest to some of your numerous readers. These cows have not been made to do their best, as they were running on a broom straw field from the 1st of May until the 10th of August. Then I commenced to feed some green corn, peas and such green crops as were then on hand. I milked on an average eleven cows during the year. From this number I sold \$1,623 worth of cream and skim milk in the twelve months. This skim milk was allowed to sour and was used for baking purposes. One half of the skim milk was fed to calves and hogs. Each cow had a calf during the year, the price of which would average \$25.

The manure from these cows is worth a great deal in bringing a farm up to a high standard of fertility. The daily ration per cow, when in full flow of milk, is two bushels of ensilage, eight pounds of bran, and all of the cut corn fodder they will eat up clean. The cost of this would be as follows:

Ensilage	4c.
Bran	7c.
Corn fodder	2c.
	—
	13c.

I feed this ration five months of the year. I feed bran summer and winter. It pays to feed it in warm as well as in cold weather. My experience is that cows will do better when fed ensilage in winter than when feeding on the best grass in summer. Ensilage is truly the poor man's friend. Think of the amount that can be raised on an acre—from twelve to twenty tons. With ensilage and peas for feed, both of which can be produced at small cost, we can raise cattle in Eastern Virginia at a profit.

Nottoway Co., Va.

T. O. SANDY.

POLLED DURHAMS.

Editor Southern Planter:

Many people seem to get the Red Polled and Polled Durham confused, or to think the Polled Durham are grade cattle. I take the opportunity of answering inquiries through your valuable journal.

The pure Shorthorn branch of Polled Durhams are known as "Double Standards," because, being of recorded Shorthorn ancestry, they are eligible to registry in the Shorthorn record. Being naturally polled, they are also eligible for registry in the Polled Durham Record. The origin of the breed is as follows: Oakwood Gwynne Fourth, registered in Vol. 15, p. 803, had loose horns or scurs. When bred to seventh Duke of Hillhurst, 34221, she dropped a pair of hornless roan heifer calves, now named and recorded as Mollie and Nellie Gwynne.

Oakwood Gwynne Fourth to the service of Bright Eyes Duke Eighth, 31874, produced a hornless red bull calf, recorded as King of Kine, No. 23, Polled Durham Record, and No. 87412, Shorthorn Herd Book. King of Kine, bred to these heifers, laid the foundation of this popular breed.

All Shorthorn breeders know that the Gwynnes are of the Princess family, from which more noted dairy cows have come than from any other strain. The Princesses are known, wherever Shorthorns have been bred, as "Milking Shorthorns." The Princesses, too, have the distinguished honor of the longest recorded ancestry found in the Herd Books. It is a matter of history (see Sander's Shorthorn Cattle, p. 94. Belvedere, 1706, of the Princess blood); that when Mr. Bates came to the point of calling on an out-cross to reinforce his celebrated Duchess tribe, he bought Belvedere, 1706, in the conviction that in all the strains of Shorthorn blood there was none worthy to be commingled with it but that of the Princess blood. It was a fortunate incident that so good a family produced a hornless animal.

J. L. HUMBERT.

Albemarle Co., Va.

There is also a single standard Polled Durham which is only eligible for registry in the Polled Durham register. This strain came originally from a Muley and Shorthorn bull.—ED.

It may not be generally believed that a horse will put on flesh more readily if watered regularly. A light drink in the morning before feeding will assist very materially in improving the digestion and general health of our noble friend.

Mention the *Planter* when corresponding with advertisers.

The Poultry Yard.

HATCHING CHICKENS.

If you intend to have good winter laying hens, it is time that you set about the work of hatching the chickens from which the pullets which are to be the best of these layers are to be selected. If large numbers are to be kept, you want an incubator to do this work. If only a few fowls are needed, the old hen will meet the requirements. If you determine to try an incubator, buy a good one from a reliable firm which has a reputation to maintain. You will find all the best machines advertised in *The Planter*. We have friends who are making successes with nearly all the different makes advertised, and therefore we do not feel justified in selecting any one maker's machine for special commendation. When you have got the machine, follow the instructions given for operating it closely, and do not experiment with your own ideas. If the machine is to have a fair trial, operate it according to the maker's directions. If it fails, then the machine is at fault, and the maker should be held responsible. When you buy an incubator, buy a brooder as well, or your investment in the incubator may be a waste of money. Incubator chicks must have brooder mothers, or they will make but poor progress in growth. It is true that it is not a difficult matter to make a brooder which will do good work, but this requires time and a knowledge of the requirements for maintaining an equable temperature neither too high nor too low. Later in the season, when the weather is warm, this is not a matter of so much importance, as the chicks are not likely to suffer, even though the temperature in the brooder may not be exactly right. If you do not have, or intend to have, an incubator, select some short legged, year old hens, well feathered, and encourage them to become broody by leaving them some eggs in the nest (mark these so that they may not get mixed with those sold as new laid eggs), and feed the hens with a stimulating heating diet like corn and warm mash. When they take to the nest, make up nests in a house where the other hens will not disturb them, and give them no more than eleven eggs each at this early season. The house in which they are set should be a warm house, free from drafts, and not too light. We prefer always to set a hen on the ground on a dirt floor, as the moisture from the soil helps the hatching of the eggs. If more than one hen is set in a house, cover each hen with a wire coop or put a wire door before each nest. This will prevent the hens leaving their nests and crowding two or three on one lot of eggs and spoiling the others. Take the hens off every day, and feed and water them and air the eggs. See that they return to

the eggs in due time—say fifteen minutes after being taken off.

ARTIFICIAL INCUBATION.

Editor of Southern Planter.

It takes a lot of big words and long phrases, perhaps, to write an up to-date article on incubators, but somehow or other I have been reasonably successful with just common United States language when it comes to the hatching question.

Let us be plain and call things by their right names. A fertile egg is a seed; it must have the necessary warmth to sprout and grow—a temperature of 103; it must also be cultivated, the eggs must be turned, aired and manipulated after nature's ways.

A temperature of 103 seems to be a standard, although very few recognize that placing the thermometer differently would necessarily mean that it would read differently, but such is the case. With the thermometer between the eggs showing 103, the same thermometer lying on the eggs would show 104, or if suspended above the eggs near the tank it would show still more. I prefer placing the thermometer on the eggs, thus showing the combined heat of the eggs and the heat applied to them. Still more, I prefer a variation of temperature as the hatch progresses; for instance, 102 to 103 first week, 103 second week, and 104 third week; this variation being due to the increased animal heat in the eggs as the chick develops. This temperature will bring good results.

There are bushels of iron clad prescribed rules about turning the eggs just so, but my advice is to turn them as often as you have time, and air them as often as you have time. I don't mean that it would be necessary to put in your whole time or even a tenth of it turning and airing the eggs, but I do mean that they should be turned at least once every day, and twice every other day, and that when looking at the thermometer the tray should be pulled out and let the eggs get a whiff of pure air. Why? you would ask. I will tell you. Turning the egg ripens it clear around, the germ comes to the top; every movement of the egg makes a corresponding movement of the embryo chick; besides ripening the shell clear around, these movements wake the chick up, it's exercise for it, it moves, expands and develops its own strength; this principle applies to all life, whether stock or eggs; for instance, a stock breeder would not pen up a dam in close quarters to bring a strong young one. There is simply nothing mysterious or unaccountable in hatching eggs; a little reasoning in advance of the real thing explains most everything about it.

Now about moisture. An egg must get rid of a lot of moisture before it can hatch. Eggs during incubation get smaller and lighter; this being the case applied moisture could not enter the egg. The moisture and ventilation questions are so entwined with each other that the effects of one are often taken for the effects of the other. Personally, I do not believe in dosing out the air in prescribed quantities. There is lots said about governing the size of the air cell by opening or closing the dampers, but I prefer correct and continuous ventilation. If the incubator is correctly fitted there need be no dosing of the air in a mystical way with dampers. I prefer a constant mild circulation of air, and depend on airing the eggs in the open air to conform to nature's ways.

What's the good of airing the eggs? might be asked. In answer, I will say that the egg shells, like many other things, expand in heat, and contract in cold. This expansion and contraction breaks down the tough fibres of the shell, and when the chick is due to hatch it can hatch. I am sure moisture, however light, is good for shells, good for the reason that it affects the shell only.

Good hatches are made with and without moisture. Opinions are about equally divided. I am satisfied, in fact I know, it does no harm to apply a little moisture directly to the shells if the ventilation is sufficient. Have tried all the moisture plans, and plans without moisture, and have, at this time, more faith in the old fashioned way of sprinkling the eggs occasionally than any new way.

The old fashioned sprinkling is applied directly to the shells, and does not make a heavy, continuous, damp air in the egg chamber. It does not matter about exact dates in sprinkling, exact dates would be nonsense, but I can guarantee that you will do the eggs no harm if you sprinkle them with tepid water on the 12th, 15th and 18th days.

Ohio.

M. M. JOHNSON.

FEEDING FOR EGGS.

Editor Southern Planter:

I would not advise any one who has a good healthy flock to undertake doctoring them with drugs with a view to forcing egg production, either summer or winter. On most farms, there are plenty of feeds that would go towards making a perfect balanced ration, if we took advantage of them. The secret in making hens lay, is simply providing them with suitable feed; and it is the safe way.

Corn, wheat, oats, barley and millet seed are good poultry feed; some do not believe in corn, but their reasons are mostly like the small boy's "because."

The Agricultural Experiment Stations tell us that corn is one of the best feeds for poultry, but they do not tell us to feed it exclusively; still more, cool reasoning would not suggest that we feed it exclusively.

The natural make-up of their feed is a variety; a little of this and that and constant exercise in procuring it. Some tell us to *make them scratch* for their feed. A more correct way to say it would be to *let them scratch* for their feed; they would rather do it than not; besides, it does away with gorging and encouraging a lazy disposition.

Corn exclusively, or wheat or millet exclusively, is too heavy and too rich; something to make bulk must be added. I know of nothing better than wheat bran to balance up a heavy rich food; it is so common, though, that it is hardly popular. Bran makes bulk; not only bulk, but it clears the passages and keeps the digestive organs in condition. Bran alone would be too light for exclusive food; besides, it would not be in line with nature to feed nothing else. The crow is a grinding mill, and we must keep it at work.

The different grains would not be a perfect feed alone. Grass, insects and dozens of things we hardly think of, go towards completing the natural wants. Fowls on free range usually find these extra knick-knacks; but penned up fowls, or fowls in winter, must have their equivalent in some form, or they cannot do the very best. Cut clover or alfalfa hay, or cut vegetables and green cut bone, help to make summer out of winter as near as it is possible. All these things are within our reach, and the time required to procure them will return a nice profit. These means will bring eggs, and it is the safe way.

M. M. JOHNSON.

Clay Center, Neb.

GREEN BONES.

I never fed very much green bone until last fall, when I started early and fed all winter, and was more than paid for my trouble with an abundance of eggs. In the month of January, I received more eggs than in any other month of the year, but the previous winters the eggs did not pay for the chicken feed. The cost of the green bone is a mere trifle, and it requires only an ounce to each hen about every other day, and it is enjoyed and craved for above all the other foods. A bone mill is as much a necessity to a poultryman as an anvil is to a blacksmith. As an egg producer, a bone producer, and a health producer, green bone is unexcelled.

B. H. SEWELL.

Galva, Ill.

When corresponding with advertisers, kindly mention the *Southern Planter*.

The Horse.

NOTES.

Imported Diomed, thoroughbred son of Florizel and the sister to Juno, by Spectator, was a chestnut horse, foaled 1777, and bred by Sir C. Bunbury, England. He was imported to Virginia in 1799, when 22 years old, and died the property of Col. Hoomes, in 1808, aged 31 years. The initial Derby, probably the most noted of English classics of that character, was run in 1780, and won by Diomed, then three years old, which gained him distinction, and he was for a term of years well patronized in the stud, but then his popularity began to wane, and he was sold for export. In Virginia, imported Diomed sired such horses as Ball's Florizel; Euroc, the sire of American Eclipse, and Sir Archy, who got Timoleon, sire of the famous Boston. What Diomed did toward the improvement of the thoroughbred in this country is a matter of history, and in its annals the name of this famous son of Florizel will endure as long as the horse holds a place in the affections of the people.

Mr. A. Pollard, who removed from Toronto, Canada, during the early part of 1902, to the Dunraven Farm, three miles east of Richmond, reports that he is well pleased with his purchase, his determination being to devote the place mostly to breeding, grazing and rearing of live stock. The greater attention, however, will be given to horses, for which Dunraven is admirably adapted on account of its location and the fine roads in the vicinity. During the past season, Mr. Pollard lost by death the registered hackney stallion Aristocrat, chestnut, foaled 1899, by Banca, dam Polly, by Norfolk Hero. Among the horses now at Dunraven are Margery, the good looking half bred hackney mare, by Roseberry. She was foaled 1893, and is in foal to Aristocrat. The yearling chestnut colt, by the hackney stallion Squire Rickels, out of Margery, is a fine specimen, as also a couple of fillies, viz., a black two-year-old and a yearling chestnut, both by Squire Rickels, out of a well made bay mare of Morgan blood. The latter is owned on the farm, and will be mated this season with some good thoroughbred sire, and the produce should make a high-class hunter.

Dr. J. C. Walton, prominent for years as a physician and railway surgeon, also as a breeder and owner of light harness horses at Reidsville, N. C., has removed to Chase City, Va., where he has headquarters at "The Mecklenburg," the elegant new hotel and sanatorium there, which is under the same management as "The Jefferson," in this city. Chase City has become noted for its lithia and chloride of calcium waters, while The Mecklenburg has complete electrical and hydriatic apparatus, with a splendid chemical and microscopic library. Dr. Walton is the resident physician at Chase City, and his presence and wide experience is likely to be of lasting benefit to this new health resort. During recent years, the Doctor has owned and driven such good horses as Lucy Ashby, 2:21½; a full sister to her, who was sold for export; Matie, 2:30½; Miss Parker, 2:29½, and others,

among them the fine young mare Princess, of Ridgefield, by Prince Belmont, now in foal to the great young sire Lynne, 2:10½.

The Ainslie Carriage Company, of this city, report that the season has been a prosperous one and the demand good for all classes of fine pleasure and business vehicles. Among the orders recently filled was one for a new ambulance for the Virginia Hospital, which is a model in point of workmanship, and finished and furnished with all modern conveniences. Mr. David A. Ainslie, the head of this concern, shows, among other innovations at the Company's big warerooms, a new style of runabout wagon, the body of which swings higher and is finished in gaudy colors, wide stripes being noticeable and yellow the most prominent shade. The carriage-house of Ainslie has been established for generations, and as designers and builders of the highest class of vehicles has gained a wide reputation.

The imported Hackney stallion, The Duke, son of Silver Star and Lady Fanny, Rob Roy, offered for sale in our advertising columns by T. O. Sandy, of The Grove Farm, Burkeville, Va., should prove a most desirable acquisition to any stock farm or breeder in search of a horse whose get develop into well made, handsome and serviceable horses. The Duke is registered in both the English and American Hackney Stud Books. He is well preserved, unusually vigorous, and in rugged health, while kind and tractable in harness and under the saddle. This good stallion will be sold at a price which he can more than earn if placed in proper hands in a single season. Statements made by Mr. Sandy can be relied on, and he will be pleased to furnish full particulars.

Capt. C. B. Denson, widely known as a soldier, statesman and scholar, and for more than a quarter of a century past prominently identified with the affairs of the North Carolina Agricultural Society in the capacity of secretary, treasurer and member of the Board of Directors, died at Raleigh on January 15th, his death being due to general debility, at the age 65. Capt. Denson was born at Suffolk, Va., September 29, 1837, but had passed the greater part of his life in North Carolina.

BROAD ROCK.

The thoroughbred stallion, Saint Charles, out of Carita, by Saint Blaise, owned by D. H. Barger, proprietor of "Walnut Grove" Farm, and L. E. Johnson, vice president and general manager of the Norfolk and Western Railway, has been given by these gentlemen to the Virginia Polytechnic Institute and Experiment Station, at Blacksburg. Saint Charles is one of the best bred horses in America, and is a great acquisition to the pure-bred stock of the farm. The thanks of the people are due these gentlemen for their liberality.

Miscellaneous.

FORESTRY—PRACTICAL.

Editor Southern Planter :

The Division of Forestry of the National Government in recent years has given much attention to the improvement of forestry and the prevention of the destruction of the timber of the country. The immense devastation of property by forest fires, which sweep over the extensive mountain territory annually, leaves a charred and blackened district repulsive to the eye and destructive to the fond expectation and hopes of the dwellers on the surrounding farms, many losing their fences and also their humble homes, filled with terror in danger of their personal safety. The desolation can be more easily imagined than described. The beautiful Blue Ridge, once the pride and resource of the Valley of Virginia, now, in large part, periodically is made to resemble a smoking volcano, denuded of her valuable forests and the population discouraged. Other mountain districts of the State, suffering like wastes of immense values. The causes of these fires are numerous, but a majority of them from most trivial and unpardonable recklessness, neglect, don't-care and badness. The public and private persons have suffered so long and so frequently from "the fire fiend" that this great evil has been regarded as a matter of course, and a resort is sometimes had to insurance. But this does not restore the forestry which has gone up in smoke. It only transfers the loss from one pocket to another. The value is irretrievably wasted.

A remedy proposed by the Forestry Division is to arouse public sentiment and direct it in an organized and effective action to express by suitable official vigilance, strengthened by official legislation. The time has passed for continued indulgence in a slipshod neglect, "I didn't think," "I don't care," or a "defective flue," to satisfy the reasonable and just demand of a thinking and moral civilization. Those who are incapable of handling the many modern combustibles can be taken care of by the State. An aroused and vigilant public sentiment can save more values from destruction annually than any increased toil and enterprise can replace. If we would have capital and immigration come to Virginia, we must show a resolute disposition to protect both by intelligent methods. But to return to forestry proper. At once measures should be employed to restore the denuded places in the farm forests by plantations of walnut, locust, white oak, hickory and other timbers. It is entirely practicable. If prompt action is taken, there can still be seed from last year's crop gathered. Do not conclude that the profit is too remote. The cost will be small in labor and expense. It will be a good investment for poster-

ity. It will add value to the farm, if for sale. Cases are reported by the papers of remarkable success in the boost of values produced in ten to fifteen years. The annual value of the growth of new timber on our barren wastes, if protected from fire, would increase from year to year until in twenty-five to forty years it would amount, at a low estimate, to \$500,000, or perhaps \$1,000,000. The necessities of the State will continue with the lapse of time. A wise forecast demands attention to this waste of public and private resources. If we have a government, it should govern. If it is "up to date," it should immediately suppress this Indian relic of barbarism and stupid indifference to the future prosperity of Virginia.

Augusta Co., Va

PRO BONO PUBLICO.

This appeal for attention to our forest values comes from one who was long honored with the confidence of his fellow-citizens as their representative in the Legislature, and who only retired when the pressure of long years made the burden of attention too onerous. He is one of the far-sighted and thinking men of the State, yet withal most conservative in his views, and what he says ought to have great weight given to it. We are heartily in sympathy with his views.—ED.

LIVE STOCK A NECESSITY.

Editor Southern Planter :

Age usually brings infirmities, but after the lapse of more than sixty years, *The Southern Planter* comes to us rejuvenated as if she had bathed herself in the fountain of youth.

Your last issue has determined, in my mind, that you have found the philosopher's stone. If there is any one thing that the Southern farmer must learn, either sooner or later, it is that all successful agriculture has a sure and abiding foundation in stock raising. It is a pity that your last number could not find its way into every Southern home. As a boy at the beginning of the war, I was sent to school in East Virginia, and when I came back my father was greatly amused at my impression of the country. Its vast sedge fields, red and gullied hillsides and scrub pine forest, gave to my youthful mind a weird and desolate picture. My frequent visits to that part of the State since has never relieved my mind of those early impressions. The good old days of yore have departed. The negro as a farm laborer is a thing of the past. Tobacco must in part be supplanted by clover and peas, and they in turn by other cultivated grasses and followed by cattle, sheep and hogs. When that happy day shall come, then your brightest hopes and the labor of all these years will have found their full fruition and Old Virginia will blossom as the rose.

It is time that Southwestern and Eastern Virginia should become acquainted. It was my good pleasure, some months ago, to introduce to our people a gentleman from Orange county, and before he left he bought ten head of thoroughbred Angus cows and heifers from one of our breeders, and he went away happy, because he found here what he wanted at prices much less than if he had gone North for them. If more of such wide awake farmers could be induced to venture this way, they would realize what it is to be a stock raiser, and they would also see a fine grass country with plenty of fine cattle, sheep and hogs, and find a prosperous, sleek and saucy yeomanry.

Pulaski Co., Va.

B. E. WATSON.

Accept thanks for your kind words and compliments. May the day of grass, forage crops and live stock soon come to every farmer in the South. Then truly will he be in the way of prosperity.—ED.

TIDEWATER (VIRGINIA) NOTES.

Editor Southern Planter :

I want to write you of a little patch of turnips grown by one of our friends who has a habit of calling on us now and then, and he always has a pleasant effect—something like a strengthening plaster on a weak back. It makes us feel better long after he has gone, because he has a way of putting matters up in a cheerful sort of way, which makes one more hopeful and more happy than before his visit.

In February, 1902, he planted two acres in potatoes—a small patch by itself—and dug therefrom in June 90 barrels of fine potatoes, which he sold at \$3.25 per barrel.

The last week in August he sowed the two acres to clover, and mixed with his clover seed 25 cents worth of turnip seed, sowing both with one hand, one motion and one time.

Now he has finished harvesting or pulling fully 1,000 bushels of turnips from the two acres, and his clover is looking fine and promises three good cuttings next year, good for not less than five tons to the acre.

Where land can be so handled, there surely is profit in tilling the soil. On being asked if the pulling of the turnips did not injure the clover, he replied: "No; the stirring up of the soil did not dislocate the clover. On the contrary, it operated as a sort of cultivation of the clover, and it grew faster than ever."

Upon another patch of two acres, adjoining the first two acres mentioned, he sowed clover alone,

and the seed potatoes, or potatoes left in the ground from the potato digging in June, came up thickly through the clover, and about the middle of December he went through and pulled up the potato vines and saved 14 barrels of fine potatoes for winter's use and to plant in the spring.

Your readers can figure out the profit of such farming. They have plenty of time when the Northern winter rules at the North, East and West. Here it is—viz.: "Forty-five barrels of potatoes to the acre, and 500 bushels of turnips in one season, and the land—the acre—in a fine stand of clover for another year. Potatoes sold for \$3.25 per barrel, and the turnips worth fully 20 cents per bushel to feed on the farm and cost only 25 cents for seed for two acres and the cost of harvesting the crop."

This is not a big thing, it is true. But still it may be called a big little thing, which can be repeated and duplicated upon every farm in Eastern Virginia, especially on each farm which lies under the warm and genial influences of the "Gulf Stream."

This same farmer has 200 acres of cleared land in cultivation, but cultivates only a small portion thereof himself, renting out the balance to colored farmers, who handle the land under his direction. He dictates or stipulates what crops are to be grown and how the soil is to be handled, and under his instruction both the soil and the tenant prosper.

It is not so where the tenant rents from year to year and has his own way. That is one great reason why Virginia lands, as a rule, do not improve. They, under the tenant system, have been robbed for years and years.

Our farmer referred to above does not consider it any trick at all to grow 45 barrels of potatoes to the acre and 500 bushels of turnips on the same land in one growing season, and then leave the land in such a fine stand of clover as to yield him five tons of good hay the next year, worth, right on the farm where grown, fully \$10 per ton. Land so handled pays well. Land so handled improves each year.

The soil, the climate, and the markets permit the intelligent owner here to handle his land just as a skillful teamster handles his team. We want more clover; more stock; more general farming. The farmer referred to above did not wait for "things to turn up," but he "turned out" a tater crop and then "turned up a turnip crop;" and when the "returns" are all in for the year, there will be no "sheriff's returns" to disturb the dreams or interfere with the peace of mind of the "turnip" grower.

It is just so with this same farmer with his cow-

peas and his corn. He grows the best and largest crops of peas and corn of any man in his section, and he does it "just as easy as falling off a log." He does not get out so very early in the morning, nor does he stay out in the fields at work late at night.

He does not do a real hard day's work in the year. But he manages matters. The principal ingredients in his management are simply "git," "grit" and "gumption," with a very strong emphasis on the last-named qualification.

If our Virginia farmers, as a rule, would "turn up" the soil a little more vigorously, and engage more in the raising of turnips and such like crops, and "turn up" at the country grocery a little less frequently to discuss politics, a wave of prosperity would sweep over the Old Dominion sufficiently large and strong enough to crowd out all the croakers.

Let us dig up new ideas and new methods; turn up new soil with new implements, and beat the world in results, as we already excel all other sections in great natural and acquired advantages.

Norfolk, Va.

A. JEFFERS.

NOTES.

I have observed that plowing is the work that makes corn. The stalk does not need a large hill of dirt heaped up around it to become "baked" and compressed; but the earth being made loose around it is the prime necessity.

If the fence rows are not kept clean and free from briars and bushes, the rails will rot and the fence will settle down to a rotten mass.

Fowls will do much better if they can be allowed the "run" of a stretch of woodland upon the farm instead of being confined in close unhealthy quarters. They will present a much neater and cleaner appearance under such conditions, and the man who comes round with the poultry wagon will notice the difference.

You cannot get more strength from the horse than you give him through his feed. The horse is the farmer's best friend, and he should be more than half cared for.

There is nothing like doing everything on the farm at the proper time. A few day's delay of work while the weeds are growing will make extra work. If the farmer gets behind hand with his work, it is most probably his own fault.

Dickenson Co., Va. FRANK MONROE BEVERLY.

Mention the *Planter* to your friends.

READING FARMERS

Editor Southern Planter:

It is a question well worth considering, how little reading is done by farmers, and how well satisfied they are without it.

A vast number of our land-owners go on year after year doing the same things their fathers did before them, in the same old ways, and generally with the same results, contentedly asking nothing better.

No thought is given new ways and means that are daily coming in use to shorten and make work easier and more profitable, the success of the reading man often being attributed to unfairness and greed.

There is something new under the sun, and it only remains for men to avail themselves of such knowledge as will benefit them in their life-work.

A reading farmer has a decided advantage over his neighbor who does not read, and he is very quick to use this advantage to the detriment of his non-reading neighbor; and why shouldn't he? He knows from his agricultural journal that prices are higher on all cattle this week than they were last. He knows that hogs are higher in price and scarcer than ever. He also knows that fodder and hay need only to be seen to bring fancy prices.

This much he has learned from the market quotations he has taken pains to have in hand; consequently, he is on the alert for the non-reading farmer who labors without this knowledge.

His watchful eye tells him where to go to find certain farm products, cattle, &c., that the careless farmer must dispose of in order to live, and thither he goes.

The non-reader sells, and is glad to do so, thinking of his necessities, not of the possibilities of the future, with which he would be familiar but for shortsightedness, stinginess, or, what is oftener, self-conceit, sometimes called lack of time.

Many men know too much for their own good; very often they are so full of their own ideas concerning things that no room remains to imbibe ideas of men better informed; in other words, they are self-sufficient and suffer blindly, while they labor with no visible success, ascribing failure to everything except themselves.

Farm papers, and good ones, are to be had for a mere song in this day of enlightenment. A man must own himself behind the times who does not read and keep abreast of the times. While no one will assert that every idea contained in a farm paper is infallible, yet the wheat can be sifted from the chaff, and a man with good common sense, willing to learn, can cull a vast amount of information in a year's time beside helping the press to disseminate the knowledge in fields where it is possibly more needed.

A wide-awake business man or woman must read or suffer themselves to be justly called old-fashioned and out of date.

Knowledge is now no more a fountain sealed.

JNO. F. PAYNE.

PROPOSED STOCK LAW FOR THE STATE OF VIRGINIA.

A bill to prevent live stock from running at large and trespassing upon the lands of others within the State, or ranging upon the public highways thereof, and authorizing the holding of an election on the petition of freeholders of any county, to determine whether such county or district shall be subject to the provisions of this act.

1. Be it enacted by the General Assembly of Virginia, That it shall be unlawful for the owner or manager of any horse, mule, cow, sheep, swine, cattle or goat, or any herd of such live stock, to permit the same to go or range at large or trespass upon the lands of others within this State, or range upon public highways thereof unattended, or to permit such live stock to range over or upon the public highways of the Commonwealth for the purpose of grazing thereon. For each and every violation of the foregoing provision, the owner of such animal, or herd of animals, shall be proceeded against as prescribed in sections 2,042, 2,049 and 2,050 of the Code of Virginia of 1887, and be subject to the fines prescribed in said sections; provided, however, that this act shall not apply to any lands or territory within the limits of any incorporated city or town of this Commonwealth.

2. Whenever a petition shall be presented to the circuit court of any county of this Commonwealth, signed by a majority of the freeholders of such county, or any magisterial district within such county, petitioning said court to order an election of the qualified voters thereof to determine whether such county or district thereof shall be subject to the provisions of this act, it shall be the duty of such circuit court to order an election, to be held within sixty days from the presentation of such petition, within such county or district, as the case may be, notice of which election shall be published once a week for four successive weeks in such of the newspapers published in such county if it be a county election or such newspapers published in the district, if it be a district election, as the court making the order may designate, and also by notices posted at each voting precinct within said county or district requiring an election to be held to determine the question whether such county or district will be subject to the provisions hereof, the question to be voted upon and printed or written upon the ballot shall be "for the stock law," or "against the stock law," which election shall be held, canvassed and returned in the mode prescribed by law for the holding, canvassing and returning of county elections, and if a majority of all the votes cast shall be against the stock law, then, and in that event only, the provisions of this act shall not apply in such county or district, and which return shall be duly certified by the commissioners of election to the said circuit court, and it shall be the duty of said court to enter of record the

result of such election, and if it be determined against the application of the law to the county or district, the said court shall in its order so declare and determine, and thereafter this act shall be of no force in such county or district.

3. Nothing in this act shall be construed to alter or change the laws now in force in reference to the fencing of lines of railroads and right of way thereof through this Commonwealth, nor to amend or repeal the existing laws in force in any of the counties of this Commonwealth in regard to the trespassing of stock where no fence is required.

4. This act shall be in force after January 1, 1904.

This is the form in which Mr. Leake's bill has come from the Committee of the House. Whilst not altogether what we should like, it is an improvement on the existing laws and should have the support of all farmers. We would like to see every man's line made his fence, and every crossing of this line by man or beast be at the peril of the trespasser.—ED.

Feed for Hens—Service of Sow.

Will you please tell me what amount of feed and what kind to give to chickens. I have got 50 laying hens and get but very few eggs. I am afraid I have got them too fat, although I keep them scratching all the time. My chickens are yarded and I feed them fresh bone every other day. I also have 50 pullets and I am not getting very many eggs from them.

Also, will you please tell me if it is advisable to keep a boar with the sow all the time or just when she is ready for service?

I always have grit and oyster shells before my chickens.

Gloucester Co., Va.

FRED SCHWAY.

If our correspondent will refer to our last October and November issues he will find this subject of feeding hens for egg production very fully discussed. If the hens are fat, no way of feeding will make them lay. They must be reduced in flesh by short feeding and plenty of exercise. Feed plenty of green food, or in its absence roots.

Put the boar to the sow only when in service, and after service take him away.—ED.

THE CHESTNUT GOING.

The former millions of wild pigeons of Ashtabula county, O., says the *Jefferson Sentinel*, are only known to the "oldest inhabitant," and now the chestnut, the king of all nuts for boys, will soon only be known as a cultivated nut. Parties at Harriman, Tenn., are preparing to locate a mill for grinding chestnut timber into pulp for tanning purposes. It is proposed to consume one hundred cords per day. At this rate, and with the destruction the hard-headed borer is doing, chestnuts to eat will soon be a thing of the past. In the early settlement, chestnuts, it is said by early settlers in Tennessee, were so abundant that the Indians, after burning the leaves off the ground, would pick them up roasted and sell them at the stores for 6½ cents per bushel.—*Country Gentleman*

THE
Southern Planter

PUBLISHED BY

THE SOUTHERN PLANTER PUBLISHING COMP'Y,
RICHMOND, VA.

ISSUED ON 1ST OF EACH MONTH.

J. F. JACKSON,
Editor and General Manager.

B. MORGAN SHEPHERD,
BUSINESS MANAGER.

TERMS FOR ADVERTISING.
Rate card furnished on application.

TERMS OF SUBSCRIPTION.

The Southern Planter is mailed to subscribers in the United States and Canada at 50c. per annum; all foreign countries and the City of Richmond, 75c.

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

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.

Address— THE SOUTHERN PLANTER,
RICHMOND, VA.

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PUBLISHER'S NOTES.

Our January Issue.

We have been the recipients of congratulations without number on our January issue, and what has been, and still is more pleasing to us, of hundreds of new subscriptions. For these favors, we beg to tender our warmest thanks and assure those who have sent the messages and subscriptions that it will be our constant endeavor to merit the same by devotion to the interests of agricultural advancement in the South.

We would ask that all to whom we have sent sample copies of the January issue will carefully read and examine the same, and note particularly the low yearly subscription. We feel assured that if they do this, we may confidently count upon receiving their subscription to the journal. We asked in our last issue that each old subscriber should send us at least one new subscription with their own renewal. Hundreds have done this, and hundreds more have sent us two new names with their own renewal at our special rate. May we again urge this request. There are still thousands of Southern farmers who take no agricultural journal. They cannot expect to make advancement in their calling until they become readers and students of the facts, principles and science underlying the scientific cultivation of the soil, and the breeding and feeding of live stock. If they will read *The Planter* regularly, and practice what it teaches, they will soon see better results from their labors, and cease to complain that "farming does not pay." Every one of our regular subscribers knows of neighbors who never read an agricultural paper. See some of these men, and try to interest

WOOD'S "TRADE MARK"
Farm Seeds

are the best that can be obtained—free from weed seeds and impurities and of strong germinating qualities. It is very important if you desire to secure good stands and good crops to purchase the highest grade seeds obtainable. This you can always do by purchasing "Wood's Trade Mark Brand" of Farm Seeds.

Wood's New Seed Book for 1903
mailed on request tells all about

- Vegetable and Flower Seeds,
- Grass and Clover Seeds,
- Seed Potatoes, Seed Oats,
- Tobacco, Seed Corn,
- Cow Peas, Soja, Velvet and Navy Beans, Sorghums,
- Broom Corn, Kaffir Corn,
- Peanuts, Millet Seed, etc.

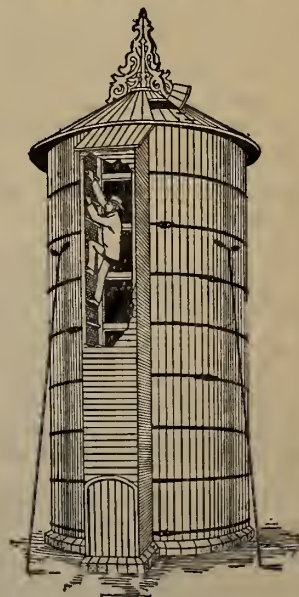
Write for Seed Book and prices of any Farm Seeds required,

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

THE "LANSING" PERFECT
TUBULAR SILO

IS THE BEST SILO MADE.

Continuous Doorway. Have no other.



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

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

"BOYS AND GIRLS." Send for latest game out, "The Magic Oracle." Sent by return mail with our large, new illustrated catalogue, for only 10cts. in coin (no stamps).
STANDARD SPECIALTY CO., Dept. 1, Anson, Mo.

them in the matter of reading. Get them to give you 50 cents, and let us send *The Planter* for a year. Every new subscriber secured enables us to make *The Planter* a better journal, and therefore benefits not only the new subscriber, but every old reader. Give us your help, and we can yet add thousands of new names to our list before the winter's subscription season is over.

DEAFNESS CANNOT BE CURED

by local applications, as they cannot reach the diseased portion of the ear. There is only one way to cure Deafness, and that is by constitutional remedies. Deafness is caused by an inflamed condition of the mucous lining of the Eustachian Tube. When this tube gets inflamed you have a rumbling sound or imperfect hearing, and when it is entirely closed Deafness is the result, and unless the inflammation can be taken out and this tube restored to its normal condition, hearing will be destroyed forever; nine cases out of ten are caused by catarrh, which is nothing but an inflamed condition of the mucous surfaces.

We will give One Hundred Dollars for any case of Deafness (caused by catarrh) that cannot be cured by Hall's Catarrh Cure. Send for circulars, free.

F. J. CHENEY & CO., Toledo, O.

Sold by Druggists, 75c.
Hall's Family Pills are the best.

WITH THE ADVERTISERS.

The Morewood Farms are new advertisers in this issue. They offer prize-winning poultry.

The Elkhart Carriage and Harness Manufacturing Co. begins the season's advertising with a card in another column.

W. W. Boob, maker of buggy and wagon wheels, renews his advertising contract for a year, beginning with this issue.

A. H. Reid, of Philadelphia, is offering his excellent Separator in this issue to our farmers and dairymen.

H. C. P. is advertising for a position on a farm in the South where he can learn the business.

The celebrated Bullfield Farms of Doswell, Va., are advertising some well-bred Poland-Chinas.

W. G. Owens, proprietor of "The Cedars," Midlothian, Va., is advertising Thoroughbred Poultry, Pekin Ducks and Bronze Turkeys in this issue.

Rand, McNally & Co., New York, want some salesmen for their well-known publications.

B. W. Stone & Co., Nurserymen, Thomasville, Ga., offer some choice stock in another column.

Schilder Bros., Chillicothe, O., Grow-

HAVE YOU EVER USED YAGER'S LINIMENT? TRY IT.

YAGER'S
CREAM
 Applying to RHEUMATIC JOINTS
 Applying to BRAIN
 TRADE MARK
LINIMENT
FOR
MAN OR BEAST
POPULAR
 SOOTHING & EFFECT
QUICK HEALING POWERS.
 IN THE TREATMENT OF DISEASES REQUIRING AN EFFICACIOUS EXTERNAL REMEDY.
BEWARE OF IMITATIONS.
 PREPARED ONLY BY
GILBERT BROS. & CO.
 SOLE PROPRIETORS
BALTIMORE, M.D.
 U.S.A.
 Registered at Patent Office

THERE ARE MANY IMITATIONS, BUT THE GENUINE IS ONLY 25 CENTS.

EXACT SIZE OF BOTTLE.

TAKE NO SUBSTITUTE.

ers of Onion Seed, have an advertisement in this issue.

The Neck of Land Farm, Jamestown, is for rent, and a good lot of stock, etc., with which it is equipped, is for sale, as will be seen by advertisements elsewhere in this issue.

R. A. Courtenay, of Pennsylvania, desires to purchase a good farm of 250 or 300 acres. Look up his ad.

Stratton & Bragg, Implement Dealers and Hardware Merchants, Petersburg, have an extra half page ad. in this number. We invite the attention of our readers to it.

Mrs. J. D. A. Fisher, Salisbury, N. C., is advertising Thoroughbred Poultry elsewhere in this number.

The International Stock Food Co., Minneapolis, have a large ad. on another page. Kindly refer to it and answer the questions they ask, and get a \$3,000 stock book free.

In addition to its Weeder advertisement, the Spangler Manufacturing Co. offers its celebrated Corn Planter to our readers.

Meyer & Son, Bridgeville, Del., have made a good hit with their Premo Dewberry. They advertise in another column.

A new advertisement this issue is the Economy Buggy Co. of Cincinnati. Look up their ad., if interested in their line of goods.

The Cyphers Incubator Co. advertises with us for the first time in this issue. We take pleasure in referring our poultrymen to the card of this company.

The well-known firm of Hensch & Dromgold Co., York, Pa., resumes its advertisement in this issue. This firm makes a full line of farm implements, and offers a seasonable one in another column.

The Columbus Carriage and Harness Co. are out with their usual spring announcement in this issue. They have been selling their goods from factory to consumer for a number of years, as many of our readers well know.

The Oakland Poultry Farm is advertising Thoroughbred Poultry and Eggs in this issue.

The Indiana Steel and Wire Fence Co. is a new advertiser with us this season. Look up their card on another page.

J. W. Hall is advertising a new Strawberry. Look up the advertisement.

J. W. Apperson & Bro., Yancey's Mills, are advertising Farms and Homes in Piedmont Virginia.

The Dairy Association, Lyndon, Vt., is advertising its preparations in this issue.

Gilbert Bros. & Co., Baltimore, have their usual announcement of Yager's Liniment in another column. Kindly refer to the advertisement, or better still, inquire of your merchants for a bottle. It will be found very useful in emergency cases.

Note the change in the advertisement of S. L. Allen & Co., makers of the famous "Planet Jr." Implements.

The Marvin Smith Co. has several ad-

FOUNDED
1802.

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

Thorburn's Seeds

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

Our Catalogue

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

Market Gardeners

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

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



Seed for New Leader Cabbage

is now ready for the public. The greatest money maker ever produced. Will yield big crops of the finest large, flat, solid, perfect keeping cabbages ever bred. Tested thoroughly, and proven to be a wonderful improvement over any extra early cabbage now grown. The best of all early flat headed varieties.

Bolghiano New Leader

is the cabbage that will make your fields yield you big returns. Write for large, free illustrated catalogue of Rocky Ford Cantaloupe, Alaska Peas, Valentine Beans, Gradus Peas and all Seeds, Plants, Bulbs, etc., for the Garden and Farm. Write now.

J. BOLGHIANO & SON, Dept. P 6, Baltimore, Md.

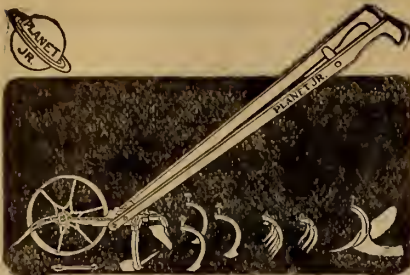
Special line of Tomato, Cucumber, Radish and all garden seed.



OLIVE'S PRIDE.

The GREATEST OF ALL NEW STRAWBERRIES. It contains more points of excellence than any other variety introduced in recent years. WRITE FOR FREE CATALOGUE; it tells you all about this grand variety and forty other varieties of choice stock free from all diseases. Second crop Seed Potatoes, etc.

J. W. HALL, MARION STATION, MD.



Some People

do not see the necessity for two wheels on a hoe. They like a Single Wheel Hoe because it is a trifle lighter than the Double, and it does not cost quite so much. To meet this demand we make the

No. 16 "Planet Jr."

Single Wheel Hoe Cultivator, etc.
It is our latest 1908 model of this tool and is a decided improvement on anything of its kind we have heretofore offered. It is provided with two hoes for working middles or both sides at once, throwing dirt to or from the rows; three cultivator teeth for working middles; two rakes for pulverizing and smoothing, and a plow which is also an excellent furrow opener. Handles are adjustable to fit short

Planet Jr.

or tall workmen or children. All attachments are quickly and easily changed. It will work any grain crop planted in rows and one person can do more and better work with it than six men can do with hand hoes. Should you need a horse tool you will find the No. 3 "Planet Jr." Horse Hoe, etc., shown below to be the best in existence.

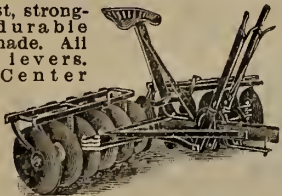
These are but two of our fifty seeding and cultivating implements, including plain and combined Seed Sowers, Wheel Hoes, Hand Cultivators, Walking Cultivators, One and Two-Horse Riding Cultivators, Special Sugar Beet Tools, etc. Our new 1908 catalogue is educating. It contains over 100 illustrations with full descriptions and prices. It costs you nothing and will make you money. Write for it.

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



OUR LOW HITCH DISC HARROW

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



TOLEDO PLOW CO., Toledo, Ohio.

Don't Monkey with anything but the **"PEERLESS,"**



If it is clean, unbroken peas you want, The "PEERLESS" is easy to operate, light to handle, strong and durable, elegantly finished. It will clean peas to perfection, also millet, sorghum seed and velvet beans. J. E. Sanders's latest improved, fully guaranteed. We pay freights. Write to-day for prices, address,

PEERLESS PEA HULLER CO., Box V, Dalton, Ga.



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.

vertisements in this issue. This house can furnish anything needed on the farm. Write them for their latest catalogue.

The "Iron Age" Cultivators are gaining in popularity. An ad. of them will be found in this issue as usual. If you have not yet gotten the latest catalogue, address the Bateman Manufacturing Co., Box 167, Grenloch, N. J.

Gleason's Horse and Cattle Powder should be in every stable. Look up the ad. in this issue.

The Lansing Silo is offered to our readers by A. M. D. Holloway. The silo has many commendable features, and we invite those interested to write for catalogue and prices.

Foutz's Horse and Cattle Powder is advertised elsewhere in this issue. It is recommended as one of the finest tonics on the market. Your dealer probably sells it. Look up the ad., and write for pamphlet No. 8, which will be mailed free.

The DeLoach Mill Manufacturing Co. are advertising their well-known Pony Saw Mill. This is a very low priced mill, and is guaranteed in every particular by its makers.

The Richmond Plumbing and Mantel Co. have a half page advertisement in this issue. They are having a good run at present on their "Favorite" Range.

Woodland Farm is offering some nice Dorsets this month.

W. T. Thrasher is advertising Short-horns at right prices.

The Ruumsy-Williams, C., St. Johnsville, N. Y., are offering Gasoline Engines and Threshers in this number. Get prices and catalogues.

The Peerless Pea-Huller Co., Dalton, Ga., is a new advertiser in this issue. They exhibit splendid testimonials regarding the Peerless.

SPECIAL OFFER.

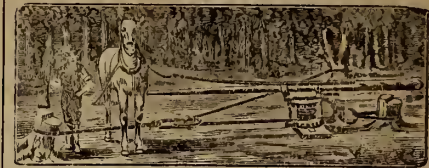
To poultry raisers who read the *Southern Planter* we will send a leading poultry journal, subscription 50 cents, prepaid, for one year, if you will fill out the following blank and forward it to us by early mail:

How many hens have you?.....
How many chickens do you expect to raise next year?.....Do you intend to buy an incubator?.....
Cut out and mail to the Hawkeye Incubator Company, Newton, Iowa, Box No. 119. Our contract is limited for subscriptions, send at once.

Gasoline is to the country what electricity is to the city; with the "big end" in favor of the farmer, as he can get both light and power without running wires or paying bills which are measured out monthly by the meter system.

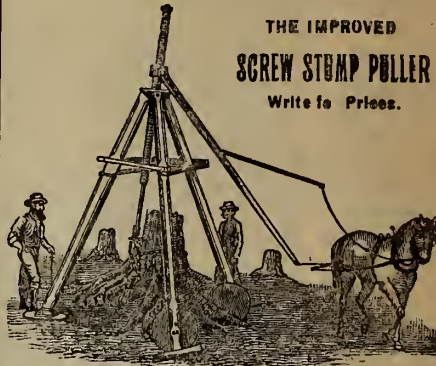
As an economical and reliable power for the farmer, the Engine manufactured by the Weber Gas and Gasoline Engine Co., of Kansas City, Mo., seems to have solved the problem. A mechanical triumph, which requires no engineer, no fireman—in fact, can be operated as efficiently by the farm hand as by the expert. A power which is ever ready and can be run without danger to life or its

STUMP PULLERS



All Sizes and Prices. Catalogue Free.
MOHLAND & COMPANY,
BURLINGTON, IOWA.

THE IMPROVED
SCREW STUMP PULLER
Write for Prices.



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

STUMP PULLER



Most Powerful, Handiest and Strongest Built in the World.
We make 4 kinds in sizes to suit all needs and of any desired strength. Saves time and does the work right. The operation of pulling stumps and trees by our methods is simple and easy. Send for Free Catalogue.
CHICAGO STUMP MACHINE MFG. CO.,
226 La Salle Street, Chicago, Ill.

HERCULES STUMP PULLER



Clears an acre of heavy 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



FREE
From anxiety over wash day, are all who use a DILLY QUEEN WASHING MACHINE. We guarantee it to be the best. A trial machine sent at factory price. Agents wanted for exclusive territory. Write for catalogue with full description. We will surely please you.
LYONS WASHING MACHINE CO., Lyons, Mich.



IF WE DID NOT KNOW OUR SPRAYER AND SPRAYING MIXTURE

the Best ever devised, we would not buy expensive space to tell you about them.

WRITE TO-DAY and we will send you a Book showing the benefits derived by the use of our Mixtures and Spraying Outfits.

Lenox Sprayer & Chemical Co., Inc.
Dept. 11 **PITTSFIELD, MASS.**



THE APPLE MAN

above all others is the one who needs to spray. Good, smooth, even sized, disease-free, salable apples are now an impossibility without spraying. For the apple man's use nothing quite equals our

Century Barrel Sprayer.

Submerged brass cylinder, brass ball valves, everlasting plunger packing, automatic agitator. Unequaled for durability, ease of operation, free water ways. Eighteen styles of sprayers. Catalogue with formulas and testimonials free.

THE DEMING COMPANY, SALEM, OHIO.
Western Agts., Henlon & Hinbell, Chicago.

Get the Best



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

THE ECLIPSE

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

Large fully illustrated Catalogue and Treatise on Spraying—FREE.

MORRILL & MORLEY, Benton Harbor, Mich.

SPRAY PUMPS

SAVE MONEY BY BUYING ONE OF OURS.

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

Mention the *Southern Planter* when corresponding with advertisers.

surroundings. Many of these engines, stationary, or mounted on all iron and steel trucks, are used for heavy work throughout the civilized world; grinding, shredding, threshing, wood sawing, and many other classes of work requiring heavy and light power. This Company also makes a specialty of a Farm Engine of 2 1/2 H. P., called the "Weber Junior," which is used to great advantage on the farm and about the dairy in operating small machinery and pumping water for stock. These little engines are mounted on a wood base and so constructed as to be easily moved about as required, the weight being but 650 pounds.

On every up to date holding will be found a gasoline engine of such size as amply meets the requirements.

We are glad to direct the attention of our readers to the advertisement of the Field Force Pump Co., of Elmira, N. Y., which appears on another page of this issue. This pleases us in the first place, because these people are old and valuable advertising patrons of ours, and in the second place it pleases us, because we know that their goods are satisfactory to our readers. In any event, we have had no single complaint since we have been carrying their advertisement. They make a full and complete line of spraying machinery, apparatus and appliances.

They are manufacturing only such things as have been thoroughly tested and have been found to be of merit to the orchardist and others who find it to their advantage to spray. Write them for matter touching the subject of their specialty.

AN HONEST ANSWER.

Nathan, when a small hoy, once drifted into a Sunday-school, or was dragged there—accounts differ—and when asked concerning the chief end of man, merely shook his head. The question was not clear. Trying again, the teacher sought to get from him some idea of moral responsibility. There was no reply. A third effort was made by gradually approaching the subject, the teacher asking him what he best liked to do.

"Shirk work," was the prompt reply.—Dr. C. C. Abbott, in February Lippincott's.

The Pastor.—I hope you never swear when the baby is irritable."

The Parent.—"Oh, no; the baby attends to all that."

"I've made it a practice to put all my worries down in the bottom of my heart, then set on the lid an' smile."—From "Lovey Mary," The Century, January, 1903.

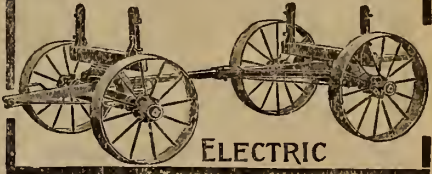
Government statistics show that the Miami Valley in Ohio produces better grain and has purer water than any other section of this country. It is Nature's garden. Right in the heart of this favored spot is our distillery. We have at our very door the two essentials for producing the finest whiskey in the world—the best grain and the purest water. Add to these one of the most completely equipped distilleries ever operated and an experience of 36 years in distilling whiskey

Wise Man's Wagon.

The man who has had experience in running a wagon knows that it is the wheels that determine the life of the wagon itself. Our

ELECTRIC STEEL WHEELS

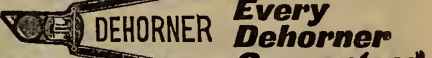
have given a new lease of life to thousands of old wagons. They can be had in any desired height, and any width of tire up to 8 inches. With a set of these wheels you can in a few minutes have either a high or a low down wagon. The Electric Handy Wagon is made by skilled workmen, of best selected material—white hickory axles, steel wheels, steel hounds, etc. Guaranteed to carry 4000 lbs. Here is the wagon that will save money for you, as it lasts almost forever. Our catalog describing the uses of these wheels and wagons sent free. Write for it. **ELECTRIC WHEEL CO., BOX 146 QUINCY, ILLINOIS.**



WE'LL PAY THE FREIGHT

and send 4 Huggy Wheels, Steel Tire on, - \$7.25 With Rubber Tires, \$18.00. 1 mg. wheels 3/4 to 4 in. trend. 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.**

LATEST (Newton's Patent)

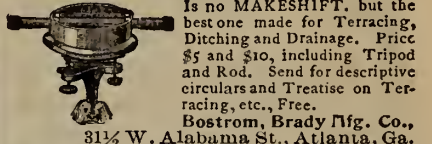


DEHORNER Every Dehorner Guaranteed

THOUSANDS IN USE. Ask your hardware dealer for them or write **M. H. BROWN MFG. CO., DECATUR, ILL.**

BOSTROM'S IMPROVED FARM LEVEL

Pat'd 1902. WITH AND WITHOUT TELESCOPE



Is no MAKESHIFT, but the best one made for Terracing, Ditching and Drainage. Price \$5 and \$10, including Tripod and Rod. Send for descriptive circulars and Treatise on Terracing, etc., Free. **Bostrom, Brady Mfg. Co., 31 1/2 W. Alabama St., Atlanta, Ga.**

Corn Planting

must be well and carefully done, as the future crop depends upon it. For all purposes, in any soil, on all kinds of ground nothing equals the

SPANGLER CORN PLANTER.

It saves time, labor, money and insures the crop. You know when it is working; you can see the corn on its way to the ground. Made with or without fertilizer attachment. New device for sowing peas, beans, ensilage, corn, etc. We also make the famous Spangler Low-Down Grain and Fertilizer Drill. Write for catalog and circular. **SPANGLER MANUFACTURING CO., 5310 6th St., York, Pa.**


A Kant-Klog SPRAYER

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

TO AGENTS: \$20.00 A DAY is what one new agent made. Another has sold and delivered 666 machines and has 100 more sold for later delivery. With the complete detailed instructions we send our agents any man of ordinary ability can do as well. For further information address, **Rochester Spray Pump Co., 21 East Av. Rochester, N.Y.**

HENCH'S 20th Century Steel Ball Coupling Cultivator

With Double Row Corn Planter and Fertilizer Attachment Complete on One Machine.



Parallel beam movement, pivoted axle, with interval beam movement in connection with the removable spindles, or either independent of each other. Centre lever for spreading and closing shovel gangs. The most complete cultivator on the market, having every possible movement of the shovel gangs.

Order immediately and introduce them for next season.

The HENCH & DROMGOLD CO. Mfrs., York, Pa.

FEED MILLS.
EVERY MAN HIS OWN MILLER.

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

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

Ground Feed
saves corn and grows and fattens faster. The best mill for corn, with or without slucks, and all grains, is the



KELLY
Duplex Grinding Mill.

Crushes and grinds to any fineness, always uniform. Has great capacity. Easy running. Makes excellent meal. Uses minimum power, any kind. Double breakers, double set burrs, force feed and regulating device. 4 sizes. Catalog FREE.

THE O. S. KELLY CO., Dept. T SPRINGFIELD, OHIO.

The Old Reliable Anti-Friction, Four-Burr **MOGUL MILLS.**

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



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

The "Weber Junior" Pumper

Is all complete, ready to attach to pump. Equals 30 water pump in water. Uses but little gasoline. Is shipped erected, all connections made. Easy to start, any one can operate it. Every one guaranteed. Other sizes up to 50 H. P. Send for catalog. Weber Gas & Gas Engine Co., Box 123 Kansas City, Mo.



DITTO'S TRIPLE GEARED Ball Bearing FEED GRINDER.

Sold on trial. We ask no money in advance. Try on your own farm, if not of largest capacity, easiest running and most durable, don't keep it. Circulate free.

G. M. DITTO, BOX 48, JOLIET, ILL.



and you have a combination that is unequaled anywhere. That's why Hayner Whiskey is the best for medicinal and other uses. That's why we have over a quarter of a million satisfied customers. That's why you should try it. Don't forget that it goes direct from our own distillery to you, with all its original strength, richness and flavor, carries a United States registered distiller's guarantee of purity and age and saves you the dealers' enormous profits. Your money back if you're not satisfied. Read our offer elsewhere in this paper. The Hayner Distilling Company.

HOME, SWEET HOME. LENA WEE COUNTY.

That's the name of our home county, and after selling our products here for over seventeen years, during the last year, 1902, we sold to the farmers in this county alone, for their own use, over seventy-six thousand (76,000) dollars worth of Page Fence—our own home county, so far, being the banner county to use Page Fence.

If anything would make a company proud, how ought this to affect us. Here is where our first fences were erected, and here the bulk of our experimenting was done, and still each year we sell more fence right here at home than we did the previous year.

Our average total sales by months for the year just passed, 1902, were over twenty-seven per cent. greater than for the year 1901.

During the latter month of 1902 there was quite a drop in the price of some qualities of fence wire, which accounts for other companies cutting prices a little below ours, but there was no drop in prices of the materials of which "Page-Wire" is made. Indeed, the pig-iron out of which it is made costs \$5.75 per ton more to-day, December 11, 1902, than it did December 11, 1901, and cannot be gotten for immediate delivery for less than eight dollars more than it cost a year ago. See prices in The Iron Age, December 11, 1902, and December 11, 1901.

Thus, you see, our prices must remain, at least, as high as last year; but, notwithstanding their lower prices, our sales have been larger than ever before. We cannot use their kind of wire. It will not hold the coil feature in our fences.

A FIFTY-FOOT CALENDAR.

N. W. Ayer & Son, the Philadelphia advertising agents, who have a national reputation for "keeping everlastingly at it," believe in sticking to a good thing when they have one. For instance, their calendar for 1903 follows the design used for several years past, but with new coloring. And in truth, it would be hard to improve upon their design; the dates are plainly readable at fifty feet, yet the calendar is not unpleasantly conspicuous; it is artistic, simple and useful, and it is not surprising that it has become so popular an adjunct to business offices that the supply never equals the demand.

While they last, one will be mailed to any address for 25 cents, which barely covers cost and postage.



Announcement

We have obtained the Court's decree against two additional manufacturers who have been infringing our patent. The rule of law is: "The maker, seller or user of an infringing device are all liable in damages to the owner of the patent infringed." The Janesville Machine Co. and the Keystone Farm Machine Co. are the only firms licensed to use a flat tooth covered by our patent, and we finally warn sellers and users of all other makes. So admirably have the 60,000 "Hallock" Weeders done the work for which they were designed, that one maker after another sought to copy it. However, by the various Courts' decisions, these makers are compelled to abandon the manufacture of a Weeder having flat teeth, and they are now experimenting with other shapes; but it is the flat tooth that made the "Hallock" Weeder famous, and in view of the manner in which our patent has been sustained, it is dangerous to use an infringing tooth. Write for descriptive circulars and prices.

HALLOCK WEEDER & CULTIVATOR CO.,
Box 839 York, Pa.

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 WIRE FENCE CO.** Cuyahoga Falls, Ohio.

PAGE

Page Poultry Fence

weighs 10 pounds to the rod—bottom wires only 1/4 inches apart—and don't cost any more erected than a slazy netting. Send for descriptions. **PAGE WOVEN WIRE FENCE CO., ADRIAN, MICH.**

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.

DOW FARM FENCE

PRICE AND QUALITY WILL PLEASE YOU—WRITE US NOW.

DOW WIRE WORKS—LOUISVILLE, KY

FENCE! STRONGEST MADE. Bull-strong. Choke-tight. Sold to the Farmer at Wholesale Prices. Fully Warranted. Catalog Free. **COILED SPRING FENCE CO.** Box 53 Winchester, Indiana, U. S. A.

HIGH CARBON COILED FENCE

INDIANA STEEL & WIRE CO. CATALOGUE FREE. BOX 361, MUNCIE, INDIANA.

WE PAY \$26 A WEEK And expenses to men with rigs to introduce Poultry Compound. **INTERNATIONAL M'F'G. CO., Parsons, Kan.**

\$100.00 Send for a FREE Copy of the NEW MAGAZINE. Suggest a NAME for IT and earn \$100. No money required in this contest. Enclose stamp for particulars. NEWS OF THE WORLD CO., Rochester, N. Y.

For the Best **NAME**

FARMERS GUIDE
TOBACCO CULTURE
POTASH
COTTON CULTURE

FOUR FREE FRIENDS FOR FARMERS

Our money winning books, written by men who know, tell you all about

Potash

They are needed by every man who owns a field and a plow, and who desires to get the most out of them.

They are free. Send postal card.

GERMAN KALI WORKS
93 Nassau Street, New York

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

It also prevents Curl Leaf. Endorsed by entomologists. This soap is a fertilizer as well as insecticide. 50 lb. kegs, \$2.50; 100 lb. kegs \$4.50. Half barrels, 270 lbs., at 3 1/2 c. per lb. barrels, 425 lbs., at 3 1/2 c. Large quantities special rates. Send for circular.

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

FRAZER

Axle Grease Best in the world.

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

FOR SALE BY ALL DEALERS.

AGRICULTURAL and BUILDERS' LIME

Send for Circulars and Price-List.

FELLSWORTH LIME WORKS
REEVES CATT, Agent,
Bodley, Augusta County, Va.

S. B. ADKINS & CO.

4 and 6 Governor Street,
RICHMOND, VA.

EXPERT BOOKBINDERS
and Commercial Printers.

MAGAZINES.

The leading color pictures in the February Century—the most novel and curious in subject of any that magazine has yet published—are from interesting and beautiful studies of the aurora borealis made by Frank Wilbert Stokes while in the Arctics in the fall of 1892 and are richly worthy the subject. They reproduce in tint for the first time in a popular magazine the wonderful effects of the aurora. Mr. Stokes, probably the first real colorist to visit the Arctic regions, was with the Peary and relief expeditions on the Kite when he was privileged to see some color displays worth all the dangers and privations of the trip. His word painting is as vivid and interesting as his color work.

That the Senate is the most powerful body in the government, that it has slipped out of its orbit and is describing a larger area in the political heavens than that which the fathers marked out, that its constituent elements make the Senate self assertive, tyrannical and prone to prefer the material to the moral advantages of the republic, these and many other statements not altogether complimentary are made and discussed by Henry Loomis Nelson in his article on "The Overshadowing Senate" in the February Century, which is enlivened by plenty of lively anecdotes and clever pictures by A. I. Keller.

For those to whom the fiction of the magazines is always first the February Century has provided liberally. Lovey Mary visits Miss Viny and goes with Mrs. Wiggs and in the family on a picnic which proves decidedly Wiggessesque. The second part of Abigail H. Fitch's "When the Consul Came to Peking" carries its characters to safety through some thrilling adventures. "The Yellow Van" continues in interest. There is wit in Virginia Frazer Boyle's "Her Freedom," and much pathos in Kate W. Hamilton's "The Baby From Ruggles's Dip." There is another Pa Gladden story, too, "Knights to the Rescue," in which Elizabeth Cherry Waltz takes her gentle, lovable hero on an unusual errand of mercy.

Arnold's battle with the wilderness is the dramatic subject of the dramatic chapter in the February Century, forming the third installment of Justin H. Smith's "The Prologue of the American Revolution." The sufferings and heroism of that terrible march to Quebec make sad but inspiring reading. Prof. George E. Woodberry, editor of the valuable Poe-Chivers papers, which are concluded in the February Century, finds in the correspondence evidence that Chivers, who thought himself a genius, was to Poe, who really was one, not unlike what Alcott was to Emerson. William Gage Erving's story of his 1800-mile trip from Khartum to Cairo in an Adirondack canoe is full of exciting experiences, and tells something incidentally of Egyptian affairs. "Nobody associates fires with spinsters in any pleasant way," muses Lillie Hamilton French in "My Old Maid's Corner," but her winter night dreams over the ashes are sweet and wholesome and tenderly sympathetic. There is much verse in the number, and the Century's standard of illustration is maintained.

FOR ONLY \$35.00

The Best Buggy Bargain

You ever saw in your life—
Split Hickory Hummer.



We will sell you this genuine Split Hickory, 30 oz. full rubber-top Buggy for \$35.00 and send it to you on 30 days **FREE TRIAL** that you may hitch to it and use it enough to fully satisfy yourself that you have a splendid bargain, and that every claim we make is true. On top of this free offer we give you a **TWO YEARS** guarantee. We have an immense factory turning out thousands of jobs yearly, all of which we sell direct from our factory to user, is the reason we make this truly wonderful buggy offer.


This buggy is made of selected second growth split hickory—split, not sawed—and is a thoroughly high grade vehicle at a low price. It has hsl braces on shafts, good carpet, full rubber top, solid panel spring back, 3/4-in. round edge steel tired wheels, boot on back of body, high leather dash, storm apron, side curtains, open hearth, oil tempered springs, Norway iron bolts and forgings, and many other points of merit. It is handsome and durable, and you can have your choice of oil and lead paint in colors.

NOT a cheap thing about the job except the price. Send at once for our 128 page, 1903 Catalogue, which gives descriptions and prices of our complete line of vehicles and harness. It is **FREE.**

OHIO CARRIAGE MFG. CO.
Station 41 Cincinnati, O.

WHY NOT

Make some good money selling our line of Economy Buggies and Harness to your neighbors? You can do it easily as our people and our prices are world beaters. Do not delay but write at once for free catalog and agency plan. A cracking good Top Buggy for \$27.50. Economy Buggy Co., Box J, Cincinnati, O.



PATENT YOUR IDEAS

\$100,000 offered for one invention; \$8,500 for another. Book "How to Obtain a Patent" and "What to Invent" sent free. Send rough sketch for free report as to patentability. We advertise your patent for sale at our expense.

CHANDLER & CHANDLER, Patent Attorneys
972, F Street, Washington, D. C.

SHIP YOUR FURS

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

PALMORE'S

Law and Collection Association,

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

P. O. Box 503. 905 1/2 East Main Street,
RICHMOND, VIRGINIA.

EVIDENCE!

Extraordinary Statements Supported by Strong Testimony Offered by People of Four States.

The unusual claims made for **Yager's Sarsaparilla with Celery**, as to its wonderful efficacy in curing the many diseases caused by impure blood and weak nerves, are substantially supported by unsolicited testimony from many States.

J. F. BROWN, of Delmar, Del., says: "I suffered greatly from rheumatism last fall and winter, and found no relief until I used **Yager's Sarsaparilla with Celery**. I am now on my third bottle and hope to be cured permanently."

BESSIE S. STICKLEY, of Oranda, Va., says: "I have been taking **Yager's Sarsaparilla with Celery** for two years, and can say it is a great medicine; it has been of much benefit to me in restoring health. While taking two bottles I gained 10½ lbs."

E. B. BRADLEY, Expert Penman and Teacher of Public Schools, Launa, W. Va., says: "During the summer and fall of 1899 my health was very bad. I would get very hungry but could scarcely eat anything. I was weak and losing flesh all the time. In the latter part of the fall every little scratch on my skin would result in a running sore. I had quite a number of boils. Finally I was so weak and had such bad health I had to stop work. On the recommendation of friends I commenced to take **Yager's Sarsaparilla with Celery**, which has effected a positive cure. Since taking a course of this valuable medicine I have never been sick. I have as good an appetite as is necessary for any man, and am gaining flesh all the time. I heartily recommend it to those afflicted as I was."

ELLA DIXON, Montford Ave., Asheville, N. C., says: "I have taken only one bottle of **Yager's Sarsaparilla with Celery**, but it has done me so much good that I shall continue its use until I become a healthy woman, as I feel it will ultimately cure me. I cheerfully recommend it."

These are four statements taken at random from thousands of similar statements recently received. **Yager's Sarsaparilla with Celery** is sold by leading druggists, 50c. a bottle. Made by Gilbert Bros. & Co., Baltimore, Md.

DON'T NEGLECT, Get a Package to-day of

GLEASON'S HORSE and CATTLE POWDER.

Feed it to your stock and note the results—they will improve at once. It is the most reliable and undoubtedly the best Powder for all kinds of stock. It can be had from any dealer, so give it a trial. Prepared by

GILBERT BROS. & CO., Baltimore, Md.

The prominent feature in Lippincott's Magazine is always a complete novel. That contained in the February number is by Alice Duer Miller, entitled "A Man of His Word." Mrs. Miller, by the way, belongs to a popular New York story-writing family. Both her mother and sister are well-liked contributors to the leading magazines. The motive in "A Man of His Word" is the moral obligation of a member of the Four Hundred to marry a young school-teacher because her mother had saved his life at the expense of her own. Before her death she whispers to her debtor, "Marry my daughter." On this foundation the author has built a tale of compelling interest and infinite diversion.

In addition to the novel, eight striking short stories enliven the pages of the February Lippincott's: W. A. Fraser's "The Capture of the Canton" is a rattling good yarn of the sea. Beulah Marie Dix contributes one of her striking and unusual stories called "The Scythe in the Oak Tree." This is a Puritan incident where a man's "masterful temper" runs up against a younger man's obstinacy. "Deceivers Ever," by R. E. Verne, is a bright sketch of a pretty, perverse girl who hated boys. The cause for such a sentiment is the point of the story. Elliot Flower calls his humorous story "The Demure Wife of Ned Barrett." An obliging friend of the husband's who consents to entertain her for a while is doubtful about the applicability of the adjective. "Brother Johnson's 'Spierience," by Ella Middleton Tybout, has to do with a "brother" of color who is wont to stray from his own fireside. Clinton Dangerfield writes a tale called "A Game of Chess" which has great dramatic qualities. The game is played between lovers. The man's life is staked on it, but his fair antagonist, unaware of this, uses all her skill in his undoing. "A Race Through the Night" is an exciting automobile story by Edgar Jepson; and "Till A' the Seas Gang Dry" are letters written by a young widow to her "dear departed." It is the collaborated work of Mary and Rosalie Dawson.

A novel and attractive feature of the February St. Nicholas is an operetta in three acts, "Prince Charming's Fate," by Catherine C. Lovell, the full production calling for nineteen characters besides lords and ladies, heralds, guards and pages, a gipsy tribe and a corps de ballet. The scenes are laid in the Kingdom of Imagination, and Prince Charming is the "leading man." There are directions for the stage business and costuming; and the girls and boys and their elders should have much enjoyment from "Prince Charming's Fate."

Most important of the stories in the February St. Nicholas, of course, is the new installment of Howard Pyle's "The Story of King Arthur and His Knights," which tells of the Sable Knight and how King Arthur fought with him, even unto grievous wounding. Tudor Jenk's "The Castle of the Beeches" is a good, old-fashioned story of buried treasure. Jack London's "In Yeddo Bay" will delight every adventurous, loyal American lad. Charles Newton Hood's "The North Shore Lim-



This illustration was made from the photograph of a field of Timothy. The portion on the left was not, that on the right was, fertilized with

Nitrate of Soda

400 pounds to the acre. Every farmer is interested in getting the heaviest possible yield of grass.

The latest edition of our Bulletin, "Food for Plants," contains an excellent article on "Grass Growing for Profit," with proof that the yield of barn-cured hay may be increased 1000 pounds per acre for each 100 pounds of Nitrate of Soda used, will be sent free to all interested. Send name on Post Card.

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

SALESMEN WANTED IMMEDIATELY

For Rand, McNally & Company's "Practical Farming and Gardening" covering soil fertility, irrigation, drainage, crop culture, gardening, trucking, fruits, forestry, pruning, grafting, budding, training the grape, injurious insects, plant diseases, spraying, selecting and feeding farm animals for profit, diseases of farm animals, silos and silage, making poultry pay, handy rules, useful information, farm cookery; a new work covering all localities; destined to have an extensive sale; those first in the field will have the advantage; exclusive assignment of territory; new plan of work makes it sell at sight; no previous experience necessary; immediate returns guaranteed; permanent employment.

ADDRESS

RAND, MCNALLY & COMPANY,
142 Fifth Avenue, New York.

WANTED

Competent poultryman desires correspondence with men having capital with a view of establishing a Market Poultry and Duck Plant the coming summer. Salary expected until business is on a paying basis. Good references given from former employers.

Those with land but no capital need not answer. ADDRESS

J. H. S., CARE SOUTHERN PLANTER.

WANTED

Situation on a farm in the southern half of the State of Alabama, by a Chicago man, 34 years old, single, who wishes to study southern farming. Best of reference given. Correspondence solicited. ADDRESS

H. C. P., The Southern Planter.

SITUATION WANTED.

15 years practical experience with poultry. Understand artificial incubation. Caponizing and raising capons for market.

R. RANDOLPH CUYLER, - Orange, Va.

WANTED—POSITION

As manager of a stock or grain farm by a young man, a graduate of an Agricultural College. Can give good reference. ADDRESS

CLARENCE SYMNS LINSIDE, W. VA.

Honey-Tolu

CURES THE CROUP.



BLENDÉD PANSY

**A TEST OFFER
FOR 10 CENTS**

For 10c. in Stamps or Coin we will mail you one packet of our BLENDÉD PANSY SEED, comprising all the bright rainbow colorings imaginable—a veritable flower garden—together with our Illustrated Annual (FREE), containing valuable hints on flower seed culture.

WM. ELLIOTT & SONS,

Dept. F. 54-56 Dey St., New York.

210 Kinds for 16c.

It is a fact that Salzer's seeds are found in more gardens and on more farms than any other in America. There is the reason for this. We own and operate over 5000 acres for the production of our choice seeds. In order to induce you to try them we make the following unprecedented offer:

For 16 Cents Postpaid

- 25 sorts wonderful onions,
- 25 sorts elegant cabbage,
- 15 sorts magnificent carrots,
- 25 peerless lettuce varieties,
- 25 rare delicious radish,
- 20 splendid beet sorts,
- 55 gloriously beautiful flower seeds,

in all 210 kinds positively furnishing bushels of charming flowers and lots and lots of choice vegetables, together with our great catalogue telling all about Macaroni Wheat, Billion Dollar Grass, Teosinte, Bromus, Speltz, etc., all for only 16c. in stamps and this notice.

Quilon seed at but 60c. a pound.
JOHN A. SALZER SEED CO.,
La Crosse, Wis.

1,000,000

CABBAGE PLANTS For Sale

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

ALSO 500,000

GIANT ARGENTEUIL ASPARAGUS ROOTS,

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

ALFRED JOUANNET, Mount Pleasant, S. C.

NEW CROP TOBACCO SEED.

Cabbage, Tomato, Radish, Lettuce, and all seed for hot bed.
Send for Catalog of Garden, Farm and Flower Seed.

DIGGS & BEADLES, Inc.,

SEEDSMEN, 1711 E. Franklin Street,
Long Distance Phone 2966. **RICHMOND, VA.**

ited" has the merit of being as true as it is exciting. Joseph Blethen's "The Fire Cat" gives beside its thrills a fascinating story of an Indian superstition and an Indian hero's bravery. Some animal sketches, an account of child life in Germany and verse and pictures, written and designed for the hearts and eyes of the girls and boys, fill up the February number.

PIONEER FARM IMPLEMENT MAKER.

The pioneer manufacturer of the all-steel harrow was Mr. Roderick Lean, founder of the Roderick Lean Manufacturing Co., of Mansfield, Ohio. From a meagre beginning in a small blacksmith shop to the largest harrow works in the world, is the typical illustration that true merit wins. Early in his career he realized that to merit success his product must not only be right in principle but also right in construction and material—honest through and through. The evidence that he applied in practice what he believed in theory, is proved by the universal use and recommendation by farmers throughout the length and breadth of this country, of Roderick Lean harrows, land rollers, hand carts and other farm implements. Their catalogue is sent free on request.

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ARTIFICIAL INCUBATION BY FAR THE MOST SATISFACTORY.

The fact is generally recognized by farmers and poultrymen, that to successfully meet business competition, the incubator is a necessary acquisition. The question of quantity is not the only point of vantage over the hen's method of raising her brood, but quality is also to be considered. The chick that owes its existence to the incubator and passes the early stages of life in a brooder inherits a stronger vitality and is less subject to the attacks of disease and vermin that beset the life of the chick that breaks through the shell in the chicken-house nest.

The success of the incubator and brooder has created an industry that has rapidly grown to large proportions. Easily the leaders in this enterprise is the George Ertel Company, of Quincy, Ill., the makers of the celebrated Victor Incubator. An idea of the magnitude of their business can be formed from the statement that in one day of February, 1902, they made the enormous shipment of five carloads of Victors, covering orders from every part of the world.

The Victor has many proven points of superiority—the claim that it will hatch every fertile egg is based on many record cases where 100 per cent. hatches have been realized. This is the crucial test of worth in an incubator—success in its primary purpose—and should be the first point considered in purchasing a machine.

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giving full information about the Victor machines. will be sent to all who request it. It is not a mere advertising circular, but a book valuable as a work of reference. It is free for the asking.

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If the purchaser does not find it entirely satisfactory, he may return it at Mr. Nash's expense. This is a most fair and honest proposition, and relieves the purchaser from all element of chance in the expenditure of his money. The decision is left entirely in his hands, and he may render it according to his best judgment after trial.

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

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Write Mr. Nash for printed matter, prices and terms of free trial.

REPORTS.

U. S. Department of Agriculture, Washington, D. C. Report of the Secretary of Agriculture. Departmental Reports for the year ending June 30, 1902.

Eighteenth Annual Report of the Bureau of Animal Industry for the year 1901.

Rules and Regulations in regard to Renovated Butter in accordance with the Act of Congress approved May 9, 1902, and information concerning Adulterated Butter.

Report of the Editor for 1902.

Experiment Station Record, Vol. XIV, No. 5.

Bureau of Plant Industry. Bulletin 31. Cultivated Forage Crops of the Northwestern States.

Farmers' Bulletin 163. Methods of Controlling the Boll Weevil.

California Experiment Station, Berkeley, Cal. Report of Work of the Agricultural Experiment Station for the years 1898-1901.

Bulletin 142. Grasshoppers in California.

Bulletin 143. The California Peach Tree Borer.

Bulletin 144. The Peach Worm.

The Red Spider of Citrus Trees.

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R. F. RITCHIE, - Richmond, Va.

Illinois Experiment Station, Urbana, Ill. Bulletin 79. The Corn-Bill Bugs in Illinois.

Bulletin 80. Methods and Results of Field Insecticide Work Against the San Jose Scale.

Bulletin 81. Forcing Tomatoes.

Kansas State Board of Agriculture, Topeka, Kas. Report of the Board, 1901-1902. This, like all the reports of this Board prepared under the direction of Mr. F. D. Coburn, the well-known Secretary, is a volume of great interest and value not only to Kansas, but to all farmers everywhere. The Report makes an octavo book of 1,118 pages, with a full Index in addition. It gives valuable information upon Shorthorns, Herefords, Aberdeen-Angus, Galloway, Red Polled, and Polled Durham cattle; the breeding, rearing and fattening of farm animals; the growing of alfalfa and numerous other crops, and full statistics of the products of each county in the State. It is a sample of what such a report should be, and makes the reports of our own State Board and many other States look miserable subterfuges.

Louisiana Experiment Station, Baton Rouge, La. A Report on the Geology of Louisiana.

Minnesota Experiment Station, St. Anthony Park, Minn. Bulletin 75. Fattening Lambs of Different Grades. Oats as a Factor in Feeding Lambs. Balanced and Unbalanced Rations.

Bulletin 76. Fattening Steers of Different Types. Feeding Steers for Short and Long Periods. Feeding Steers in the Stable and the Open Shed.

Bulletin 77. Insects Notably Injurious in 1902.

North Carolina State Board of Agriculture, Raleigh, N. C. Bulletin, November, 1902. Miscellaneous Subjects

Columbus Horticultural Society, Columbus, O. Journal of the Society, December, 1902.

Pennsylvania State Board of Agriculture, State College, Pa. Bulletin 61. Annual Report of the Director.

Hampton Institute, Hampton, Va. Nature Study Leaflets, No. 8. Winter Buds.

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

Department of Agriculture, Richmond, Va. Annual Report of the Commissioner of Agriculture. This is a small octavo volume of 170 pages, of which the Report of the Commissioner occupies three pages, the report of the manager of the test farm in Charlotte county 21 pages, and the report of the chemist 13 pages. The balance of the book is mainly made up of clippings from agricultural and other journals published in various parts of the country. The only suggestions of the commissioner for making more efficient the work of the department for the advancement of the agricultural interests of the State are one in favor of an appropriation for the execution of a pure-food

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

law and another authorizing the department to analyze minerals and mineral waters, neither of which it would seem to us would amount to much in the way of helping farmers to make their labors more profitable. When one considers the cost and expenditures of the Department, which amounted in the year to \$35,070.16 actually expended, and \$8,500 in addition appropriated for work not yet executed, and the showing of the work done, as exhibited by these short reports, it would seem that, like Falstaff's celebrated tavern bill, there is an "intolerable amount of sack to very little food." The salaries and commissions of the officers of the Department and the office expenses amount to \$8,930.12, nearly as much as the Legislature (when the Department was given an appropriation and the fertilizer tax was turned into the treasury), appropriated for the whole cost and expenses of the Department and the cost of the fertilizer inspection. Now, in addition to this outlay, there is an additional one of \$6,397.11 for expenses of inspection. Surely this is an extravagant outlay for the work done and results attained. We are also disappointed at the results obtained at the test farm, as disclosed in the manager's report. Perhaps it would be unjust to charge or blame this wholly to the manager as he seems, like the Israelites of old, to have been expected largely to make bricks without straw, notwithstanding the fact that there has already been expended on the farm during the year \$9,843.64, and appropriated for it, but not expended, \$4,500.00. He complains that he cannot make complete experiments and give the results reached from lack of scales to weigh his crops, and we judge from lack of measure in which to measure them, as he gives estimates of the production in many cases where actual measure ought to be given, even to fractions of a pound. Experiments conducted on such a loose system as this can never result in supplying reliable data for the guidance of farmers. Judging from the amount already spent on the farm and appropriated for it, and the lack of equipment as yet for carrying on the work of an Experiment Station as disclosed in the manager's report, it would seem that this gift is likely to prove rather a costly one for the State before it makes any returns. Frankly, when one compares what is being done by the Department of Agriculture of this State with that done by the Department of Agriculture of the State of Kansas, as disclosed in each case by the reports submitted by the executive officer of each department, both of which reports the Virginia one of 170 pages, the Kansas one of 118 pages, are now lying before us, we are compelled to feel ashamed and humiliated at the poor showing made by this State. It is time for an awakening of interest in the Department by those in whose interest it is supposed to be run and who supply the funds to run it by a tax levied upon the fertilizer they use, which tax they as certainly pay as though collected directly from them. So far as one is able to gather from the report the function of the Board of Agriculture is now simply that of an auditing committee for a fertilizer inspection department.

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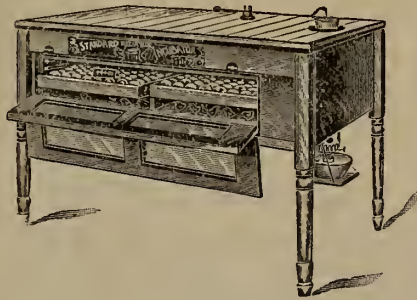
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Surely this was not what was contemplated by the Constitution and the Legislature when it was created. It should be a force for the advancement of the agricultural interests of the State with the Commissioner as merely an executive officer.

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Perhaps the most important feature which distinguishes the Reliable from any and all other makes of incubators is its superb construction, which enables it to produce and hold a uniform temperature upon all parts of the egg tray throughout the entire hatch. This does not mean that it fails in any essential possessed by any other incubator, but in



this one particular it stands in a class by itself. Poultrymen everywhere recognize the superior genius manifested by the Reliable's work. The manufacturing company is enabled to take a broad stand upon it. The offer they make shows that they never doubt for a moment that the machine in comparison with others will give the highest per cent. in hatches under all conditions and in any impartial man's hands. They make the statement everywhere in the form of a positive guarantee that "the machine must prove satisfactory to the customer in his own hands and hatch the largest possible percentage of chicks from the fertile eggs or his money will be refunded." We are showing here cut of one of the incubators.

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Cocks, \$2.50; Hens, \$1.50; Eggs, \$1.50, per 15. Satisfaction guaranteed.

A. N. JOHNSON, - Parksley, Va.

RINGLETT WINTER-LAYING STRAIN

B. PLYMOUTH ROCKS.

Choice Cockerels, \$1.50 to \$2.50. Eggs, in season, per 15, \$1.00. Incubator Eggs, \$3.00 per hundred. If not as good as you can get elsewhere for twice the money, return and get your money back.

SUNNYSIDE POULTRY FARM,

Reference: Christiansburg, Va. Bank of Christiansburg.

BROWN LEGHORNS

(Single Comb.)

Eggs from prize winners and good layers \$1.50 per sitting. Reduction on larger lots.

WHITE PLYMOUTH ROCKS
R. W. HAW, Jr., - Centralia, Va.

PLYMOUTH ROCK EGGS FOR BROILERS.

The undersigned can furnish them in limited quantities at \$4 for 100. F. O. B. at Claremont, Va.

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

WANTED!

LIVE WILD TURKEYS, SWANS,
GEESE, DUCKS of all kinds,
SQUIRRELS, etc.

Write me for prices.

Dr. CECIL FRENCH, - Washington, D. C.,
718 Twelfth St., N. W.

EGGS! EGGS! EGGS!

Best B. P. Rocks in Virginia.
Hawkins, Thompson and Bradley strains.
\$1.25 per sitting (13).
M. B. Turkey Eggs, 50c. each, \$4 per dozen.
Even the best is never too good, you'd better
buy of me Mammoth Pekin Ducks.

THE CEDARS WM. G. OWENS,
P. and S. FARM. Midlothian, Va.

COCKERELS.

S. C. B. Leghorn, \$1 each, 6 for \$5. As
good as the best. Satisfaction or money
refunded.

TURKEYS all sold.
Eggs from B. P. ROCKS, \$1 per sitting.
Mrs. JNO. F. PAYNE,
Clairmont Dairy Farm. University of Va.

**White and Barred Rock
COCKERELS**

Single bird, \$1.00; trio, \$2.50. Eggs for hatch-
ing, 75 cts. for setting of 15. JERSEY BULL,
No. 54171. J. B. JOHNSON,
Clover Hill Farm. MANASSAS, VA

**WHITE PLYMOUTH ROCKS,
HOLLAND TURKEYS**

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

JOHN A. CLARK, - SHIRLEY, VA.

THE IMP. FRUIT AND POULTRY FARM

—OFFERS—

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

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

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

FOR SALE.**ONE
PURE M. B. TURKEY GOBBLER.**

This year's bird. Weighs 25 lbs. Price, \$5.

APPLY

MRS. A. E. JOHNSON, - Manchester, Va.

Barred Plymouth Rocks

—EXCLUSIVELY—

Strong, healthy, vigorous, farm-raised
stock; bred for laying; 75 cts. per setting.

WM. B. LEWIS, Irby, Nottoway Co., Va.

MAMMOTH BRONZE TURKEYS

FOR SALE at reasonable prices, Barred
Plymouth Rock Eggs, \$1 per dozen.

ROBT. B. TAYLOR, Cedon, Caroline Co., Va.

I have a few purebred

BUFF PLYMOUTH ROCKS FOWLS

FOR SALE. Price, \$1 apiece.

W. C. DORSET, - Pilkinton, Va.

**COMPULSORY SCHOOL ATTEND-
ANCE—SOME REASONS FOR IT.**

The best schools will never eradicate
the evil of illiteracy until there is an effec-
tive attendance law in every State. To be
effective the law must be compulsory,
with sufficient penalties to cause it to be
obeyed. This has been the experience of
all other States and countries, and we may
not expect a different result here in the
South. The sooner we profit by their ex-
ample the better.

At present Austria, France, England,
Scotland, Hungary, Italy, Norway, Swe-
den, Denmark, the Swiss Cantons, the
German States, British Columbia, New
Zealand, Prince Edward Island, Tasmania,
Queensland, South Australia, the provin-
ces of Canada, and thirty-two of the
United States have compulsory attend-
ance laws. With a few minor exceptions,
these laws require attendance six, seven
or eight years, from twelve weeks to ten
months annually. In all the States in
which such laws have been enforced
longer than twenty-five or thirty years
the percentage of illiteracy has been re-
duced to a minimum. These States and
countries contain a population of more
than two hundred and fifty million peo-
ple, the freest and most progressive in
the world—more than eighty per cent of
all the people we call enlightened and
progressive. Of the thirty-two American
States having such a law only two—Ken-
tucky and West Virginia—are Southern
States. But what has been found good
for all these great States and countries
will probably not prove otherwise for us;
and it is noted with pleasure that the
sentiment in favor of such a law is devel-
oping rapidly in all parts of the South.

The following seems to be a fair sum-
mary of the arguments for compulsory
school attendance:

1. Universal education is essential to
the material, intellectual and moral wel-
fare of the State. Illiteracy is a burden
and constant menace to public morals
and civil liberty, and threatens the very
existence of the State. The State pro-
vides schools at public expense, collect-
ing money for their support by law, and
by force if necessary. It, therefore, has
a right to enforce attendance, that its
money may not be wasted and that its
interests may be protected.

2. Individual welfare depends on the
general welfare. Having taken the money
of one man to educate the children of an-
other, the State must protect that man
and his children from the oppression and
dangers of illiterate neighbors and fellow-
citizens.

3. Children have rights as well as pa-
rents, and the State must protect them in
their rights. Chief among these is the
right to such education as will enable
them to live useful and happy lives and
become intelligent and self-supporting
citizens. The importance of this right
and the necessity of its being recognized
increase as competition becomes more
fierce, the use of machinery more com-
mon, the demand for intelligent labor
greater, government more democratic,
religious liberty more perfect, and the
obligations of the individual to himself,
his family, his country, and the world
more complex and binding. Especially

For Sale A FEW FINE M. B. TOMS

EGGS in season of M. B. Turkeys, S. C. B.
Leghorn and White Wyandotte Chickens and
Pekin Ducks. Address Miss CLARA L. SMITH,
Croxtan, Caroline County, Virginia.

FINE B. PLYMOUTH ROCKS.

S. C. BROWN and WHITE LEGHORNS and
BUFF COCHIN CHICKENS, and PEKIN
DUCKS FOR SALE. 50cts to \$1.

Rev. J. W. HECKMAN, - Spottsylvania, Va.

PIT GAMES.

BLACK DEVILS and RED HORSES.

These Cocks won 90 per ct. of battles fought
in 1901 and 1902, and have never lost a battle
when gameness and cutting qualities could
win. Eggs, \$2 per sitting and stock for sale.

THOS. W. JARMAN, Yancey Mills, Va.

HAWKSLEY STOCK FARM.

**Large ENGLISH BERKSHIRES
B. P. ROCKS FOWLS,**

Eggs from same, \$1 per 13.

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

WANTED—A LARGE JACK,

Must be good foal-getter.

ADDRESS, stating age, size, price, etc.,
WILLIAM E. SANDERS. Gratitude, Kent Co., Md.

**JACKS and JENNETS
FOR SALE.**

Enclose 2 cent stamp for
new catalogue.

W. E. KNIGHT & CO.,
R. F. D. 5. Nashville, Tenn.

FINE JACKS.

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

L. L. THOMAS,

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

KNIGHT & JETTON,

Breeders of and Dealers in

Jacks, Jennets,
Stallions.

Fine Jacks A Specialty
Write for cat.

MURFREESBORO,
TENN.

**150 Jacks, Jennets & Mules 150**

Best assortment I
ever owned. Can
suit you exactly.
Write for descrip-
tion and prices.

Also will sell two
Percheron stallions
at close figures.

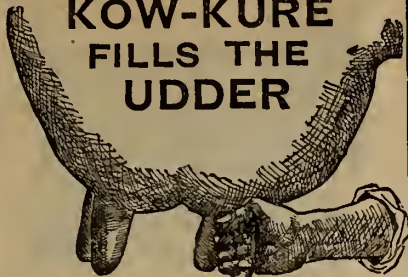
BAKER'S JACK FARM,
Lawrence, Indiana.

**CLYDESDALE STALLION.**

Will trade for Hereford bull and heifers
or Angora goats. Must be registered stock.
Horse is No. 4561, 5th Vol., American Stud
Book. He cost, \$1,400, five years ago.
Write what you have.

JO. HARDIE, Brown's Summit, N. C.

**KOW-KURE
FILLS THE
UDDER**



**THAT
FILLS
THE
PAIL**

Now we do not claim that Kow-Kure will make milk, because it is not a food, but it puts the digestive organs in condition to get the most out of what is eaten. In this way it makes the cow give a larger flow of richer milk.

SUTTON, Vt., March 6, 1899.

Dear Sirs: I had doubts about Kow-Kure increasing the flow of milk in a cow in the best condition. To make a test I weighed each milking. After feeding the medicine three days there was an increase of two pounds, and a gradual increase through the week until she had gained two and three-fourths pounds per day. This cow had the same feed while taking the medicine as she did before. I consider this result simply wonderful in a cow that was in the best condition. F. M. ABBOTT.

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

must it be regarded in those States in which the right of suffrage depends on educational qualification.

4. Such a law cannot interfere with any right of parents; for no parent has a right to make a slave of his child or to rob it of the opportunity of gaining an elementary education. Parents who would commit this crime against their children should be restrained and punished. Such a law cannot be a burden to those who would educate their children without it. As the laws against stealing are not burdensome to honest men, so a reasonable compulsory law cannot be burdensome to parents who desire to deal honestly and justly with their children.

5. The experience of other States and countries has demonstrated that such laws may be made effective, and that they need not work any hardship on individual citizens.

Teachers, school officers, and all leaders of thought in the South must begin and continue to cultivate sentiment on this subject, until just laws are on the statute books and are properly enforced.

CATALOGUES.

J. M. Thorburn & Co., 36 Cortlandt street, New York, Seedsmen. This is a beautifully got up book, and contains much valuable information. The firm is an old and reliable one.

Griffith & Turner Co., Paca street, Baltimore, Seedsmen. A handsome book replete with information on farm and garden supplies.

H. Lightfoot, Chattanooga, Tenn. Strawberry plants.

The A. I. Root Co., Medina, O. Beekeepers' supplies.

Sure Hatch Incubator Co., Clay Center, Neb., and Columbus, O. A useful catalogue for those needing an incubator or brooder.

Landreth's Seed Catalog, Market street, Philadelphia, Pa.

James Vicks Sons, 191 Main street East, Rochester, N. Y. Seedsmen.

J. I. Case Threshing Machine Co., Racine, Wis.

The Deming Co., Salem, O. Spray Pumps and Nozzles, Hand and Power Pumps. This firm is one of the oldest makers of spraying appliances.

John Lightfoot, Sherman Heights, Tenn. Strawberry plants.

J. W. Jones & Son, Allen, Md. Strawberry plants.

F. S. Bullinton, Richmond, Va. White Minorca fowls.

Bateman Mfg. Co., Grenloch, N. J. Makers of the well known and highly satisfactory Iron Age Cultivators and other farm and garden implements.

Lovers of flowers will find many interesting hints on flower seed culture in the 1903 Illustrated Annual of Wm. Elliott & Sons, 56 Dey street, New York. It contains a valuable collection of flower, garden and vegetable seeds, and will prove interesting to every one interested in flowers. It is sent free with a packet of pansy seed.

**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 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.

**USE
FOUTZ'S
HORSE
AND
CATTLE
POWDER**

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

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

Get the Genuine or send to us. Pamphlet No. 9 Free. Sold by All Dealers.

**PRICE
25¢ PER
PACKAGE**

5 PKGS. \$1.00
12 PKGS. \$2.00
CHARGES PAID

**DAVID E. FOUTZ
BALTIMORE, MD.**

**Fistula and
Poll Evil...**

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

Interesting Booklets Free.

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

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

**FLEMING BROS., Chemists,
22 Union Stock Yards. - Chicago, Ill.**

**DEATH TO HEAVES
Guaranteed**

Newton's Heave, Cough, Distemper and Indigestion Cure. A veterinary specific for wind, throat and stomach troubles. Strongly recommended. \$1 per can. Dealers, mail or Ex. paid. Newton Horse Remedy Co. (T) Toledo, Ohio.

As I retire from farming this Spring I will SELL CHEAP

the following stock and implements little used, and almost as good as new:

- 1 FRICK'S ENGINE AND BOILER, 10 horse-power, on wheels,
- 1 McCORMICK REAPER and BINDER 7 foot cut.
- 1 DEERING CORN HARVESTER,
- 1 HARTEL FULL CIRCLE BALING PRESS, 17x22,
- 1 GEISER THRESHING MACHINE, 30 inch feed.

Also Stallion, "KING IDLER," by King Alphonso, Idie Girl, a seal brown horse, 15 1/2 hands, thoroughbred, has got some fine stock on Virginia Common mares, is a sure foal getter. Apply **NECK-OF-LAND FARM, Jamestown, Va.**

**READERS
OF THE
PLANTER**

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

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

Write and state your wishes.

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

\$30 WEEKLY. Straight salary and expenses paid to advertise and introduce our Poultry Compound in the country; rig necessary. Enclose stamp. Dept. 218, Royal Co-Op. Mfg. Co., Indianapolis, Ind.

FILSTON FARM.

SECOND LARGEST

JERSEY HERD

IN AMERICA. FOUNDED 1882.

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

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

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

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

ASA B. GARDINER, Jr., Manager

Swift Creek Stock and Dairy Farm



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

JERSEY BULLS AND HEIFERS.

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

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

ELLERSLIE FARM

Thoroughbred Horses AND SHORTHORN CATTLE, Pure Southdown Sheep and Berkshire Pigs.

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

COOK'S CREEK HERD,



Scotch-Topped Shorthorns

Herd Headed by Governor Tyler, 158548 Young Bulls and Heifers for sale. Inspection and correspondence invited.

HEATWOLE & SUTER, Dale Enterprise, Va.

FOR SALE

SHORTHORN BULL CALVES,

Sired by Verbena's Champion, No. 129581. Also

POLAND-CHINA PIGS,

Sired by Black Lad, No. 47427 and Springwood Guy, No. 53799. Pedigrees furnished with all stock sold. Eggs in season from M. B. TURKEYS and B. P. ROCK CHICKENS. Come or write.

WM. T. THRASHER, SPRINGWOOD, VA.

EAST RIVER SIDE

SHORTHORNS FOR SALE.

One choice Red Bull, old enough for service.

ADDRESS

JAMES F. CLEMMER, - Summerdean, Va.

Registered P. Chinas Berkshire, C. Whites. Fine large strains. All ages, mated not akl. 8 week. plgs. Bred sows. Service boars and Poultry. Write for prices and free circular.



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

WHOLESALE PRICE ON AGRICULTURAL CHEMICALS AND FERTILIZERS.

The market continues firm and steady, with an upward tendency. Southern business is picking up, and prices are well maintained. Nitrate of soda remains strong and sulphates of ammonia are a little stiffer.

AMMONIATES.

Nitrate of soda, spot, per 100 lbs.	\$ 2 10
Nitrate of soda, futures, per 100 lbs.	2 00
Cotton-seed meal, per ton, c. i. f. N. Y.	28 00
Sulph. ammonia, spot	2 07½
Sulph. ammonia, shipment	2 07½
Dried blood, New York, low grade.	2 47½
Dried blood, Western, high grade, fine ground	2 60
Fish scrap, at New York	10
Tankage, per unit	10

PHOSPHATES.

Acid phosphate, per unit	60
Bone black, spot, per ton	17 00
Ground bone, per ton	23 50
S. C. phosphate rock, ground, per 2,000 lbs.	5 50
S. C. phosphate rock, undried, f. o. b. Ashley River, 2,400 lbs.	3 25
do. do. do. dried	3 50
Florida high grade phos. rock, f. o. b. Fernandina, per ton	7 00
Florida land pebble phos. rock, f. o. b. Fernandina, per ton	4 50
Tennessee phosphate, f. o. b. Mt. Pleasant, domestic	3 50
do. do. do. foreign	4 00

POTASH.

Kainit, future shipment, per ton	9 05
Keiseret, future shipment, per ton	7 50
Mur. potash, 80 p. c., future shipment	1 80
Double manure salt (48 a 49 per cent. less than 2½ per cent. chlorine), per lb.	1 09
Basis 48 per cent.	
High grade manure salt (90 a 93 per cent. sulphate potash), shipment	2 08
Basis 90 per cent.	
Manure salt, in bulk, 20 per cent. per unit, O. P.	64

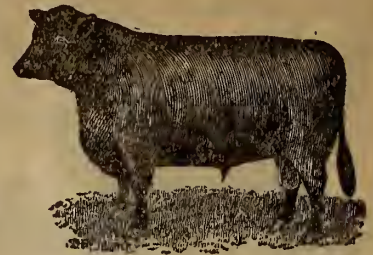
—N. Y. Jour. of Commerce, Jan. 10, 1903. [Only highest prices quoted.—S. P.]

The Frank B. White Co. of Chicago and New York, send us a very nicely gotten up pamphlet—"Your Business and Ours"—in which they bring before advertisers the advantages they can offer them in the way of preparing and displaying their advertisements and securing their insertion in the best agricultural journals in this country. This firm makes a specialty of agricultural advertising, and does its work well.

We beg to acknowledge with thanks the receipt from the Holstein-Friesian Association of America of the official record of cows and their sires, and list of official butter and milk records of the Association from 1894 to 1901.

We acknowledge with thanks a copy of the Baltimore Sun Almanac for 1903. It is full of useful information.

MARKET TOPPERS FOR SALE, LOW.



One thoroughbred Angus cow, unregistered, coming 3 yrs., with heifer calf at foot Price, \$75.
 Four three-fourths Angus heifers, two coming 3 yrs., two coming 4 yrs., bred to reg. Angus bull. Price, \$50 each.
 Four seven-eighths Angus heifers, coming 2 yrs., bred to reg. Angus bull. \$50 each.
 Three seven-eighths Angus heifers, coming 1 yr. \$30 each.
 Four one-half Angus heifers, coming 1 yr. \$20 each.
 One bull calf, out of a thoroughbred Shorthorn cow, by a reg. Angus bull. Price, \$50.
 One 9-mos.-old reg. Angus bull. Price \$100.
 One 12-mos.-old reg. Angus heifer. Price, \$100.
 All of the above cattle are black, and as well polled as a thoroughbred Angus.
 Eight beautiful reg. Angora goats, six does which will kid soon, two fine bucks. Price, \$100 for the lot.
 Address W. M. WATKINS & SON, Cottage Valley Stock Farm, Randolph, Charlotte Co. Va.

ANGUS BULL CALVES

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

SHROPSHIRE SHEEP

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

WARREN RICE, - Winchester, Va.

FOR SALE Aberdeen-Angus Cattle

Choice breeding. Registered bulls ready for service. Address A. D. PARR, care A. G. FARR, Jeffersonson, Va.

FOR SALE.

SIR NETHERLAND OF THE GROVE, No. 30672.

This Holstein bull is 3 yrs. old. His dam has given 8 gals. of milk per day, testing 4½ per cent. of butter fat. His sire is equally well bred. Price, \$80; f. o. b. cars, Burkeville, Va.

T. O. SANDY, - Burkeville, Va.

V. P. I.

Farm Bulletin

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

D. O. NOURSE, Prof. of Agr.

Blacksburg, Va.

FOR SALE

At a price which he can easily earn himself out in a single season, the Imported and Registered Hackney Stallion

THE DUKE

son of Silver Star and Lady Fanny, by Rob Roy. This horse is good looking, of fine size and well made, having no waste substance. He is a sure foal getter and his produce sell readily. Simply offered because I wish to procure a horse of different breeding to cross on fillies sired by The Duke. Address

T. O. SANDY,

The Grove Stock Farm, BURKEVILLE, VA.

COLLIE PUPS!

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

Stock Farm, "MAPLEMONT," Albany, Ver.

POLAND-CHINAS

Closely related to such famous hogs as Anderson's Model, Model of 97, Hands Off, etc. Choice pigs, and gilts for sale. Sock that will please and not disappoint you. References and testimonials furnished. Also extra good, dark-red, 8 mos.-old SHORTHORN BULL CALF for sale. Prices right.

J. F. DURRETTE, Birdwood, Albemarle Co., Va.

BERKSHIRE PIGS

I have a few first-class eight weeks old BERKSHIRE PIGS for sale. From registered stock, Biltmore strain. Prices quoted on request.

HENRY W. WOOD, - Hollybrook Farm, Box 330. Richmond, Va.

FOR SALE.

Large English Berkshire Hogs, Bared Plymouth Rock Chickens

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

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

Ayrshires, Berkshires and Oxford-Downs.

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

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

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

ANGORA BUCKS

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

C. E. JONES, - Carysbrook, Va.

THE GROWTH OF OUR SHOE INDUSTRY.

The boots, shoes and slippers made by machinery in the United States, every year, would provide a pair of some kind for more than one-seventh of the inhabitants of the earth. If they were arranged by pairs, heels and toes touching, they would make a belt that would encircle the globe, with enough to spare to stretch across the North American Continent from New York to San Francisco. Placed singly, heel and toe, they would go around the world two and one-half times. If placed on the tracks of our great trunk railroads, the rights on one rail and the lefts on the other, they would cover the irons, from the Atlantic to the Pacific, of all the continental lines that now cross our country. The hides and skins used to form this immense quantity of shoes come from all over the world, but chiefly from the East Indies, South America and Europe; and if they were sewed together in one sheet, they would make a tent large enough to cover Manhattan Island.

The following statistics, showing the condition of the industry, were furnished in advance of their general publication by S. N. D. North, Chief Statistician of the United States Census for manufacturers:

Pairs of Boots and Shoes Made in 1900.

For men, youths and boys.....	89,123,318
For women, misses and children	107,415,855
Slippers for men, etc.....	4,456,965
Slippers, Oxfords and low-cuts for women	12,655,876
All other kinds.....	5,583,405

Total pairs.....219,235,419

Total value, wholesale.....	\$261,028,580 00
Cost of materials used	169,604,054 00
Capital invested.....	101,795,233 00
Wages paid.....	59,175,883 00
Average number of wage-earners employed.....	142,922

The industry is largely concentrated in New England, chiefly in Massachusetts, where, in 1900, 45 per cent. of the production was turned out, principally in Brockton, Lynn, and Haverhill, and the smaller places in the immediate neighborhood. The figures for Massachusetts are as follows:

Value of product	\$117,115,243 00
Cost of materials used.....	75,751,964 00
Capital invested	37,577,630 00
Wages paid	27,745,820 00
Average number of wage-earners employed.....	58,645

Since 1890 the production in the whole country has increased a little over 18 per cent.; the cost of materials used 42 and eight-tenths per cent.; while the capitalization has only increased 6 and eight-tenths per cent., and the number of wage-earners 6 and nine-tenths per cent. Ten years ago Massachusetts produced over 52 per cent. of the total; but while she has made an absolute gain in the value of goods turned out, in 1900 she had less capital invested and fewer establishments engaged in the manufacture of shoes than in 1890. During the last decade, the effectiveness of the ma-

chinery used in the manufacture has been greatly increased.—Robert Grievie, in the February Success.

FINE SEED CATALOGUE.

That the Griffith & Turner Company of Baltimore, Md., propose to occupy a high position among seedsmen is apparent from the magnificence of their catalogue. It is indeed a most handsome book. The attention is arrested at once by the elegant front cover page, and with any one at all interested in the garden, the interest is kept up until he has looked through all its pages. It contains 145 pages, and is profusely illustrated with large size cuts of vegetables, fruits and flowers. They also catalogue a full and complete line of agricultural implements. One cannot escape the conclusion, both from the illustrations and from the extended and painstaking descriptions, that the Company is endeavoring to present only the best to their customers, and that their patrons are to know what the characteristics and qualities of what they are buying are, before placing their orders. Their advertising is elsewhere in this paper. They are perfectly reliable, and their trade, already large, is rapidly growing. Every one interested in fruits or vegetables should at least send for the catalogue, which is mailed free. Look up the advertisement for correct address.

BOWLING GREEN

SHORTHORNS.

HERD NUMBERS 75 HEAD.

HEADED by the Scotch bull ROYAL CANADA 136788. Cruickshank and Scotch tribes represented are Duchess of Gloster, Nonpareil, Mina, Rose of Strathalean, Ury, Crimson Flower and Louisa. Also popular American families.

FOR SALE Cows, heifers and young bulls. Foundation herds a specialty; inspection solicited, and if notified parties will be met at depot

D. M. KIPPS, Success, Warren Co., Va.

Woodland Farm DORSETS

Of 16 rams, 9 to 14 mos. old, we now have on hand, 4 are not quite good enough to head any herd in the United States. The best ram Hardbig could find in England now heads our flock. Are buying a few ewes: none to sell, but are booking orders for October dropped ewe lambs.

WOODLAND FARM, Mechanicsburg, O. (J. E. Wing, Willis O. Wing, Chas. B. Wing.)

DORSETS AND HEREFORDS

H. ARMSTRONG, - Lantz Mills, Va.

FOR SALE.

8 Reg. HEREFORD BULLS

From 6 mos. to 3 yrs. old.

8 REG. HEIFERS

From 6 to 18 mos. old. At reasonable prices.

HAYFIELDS STOCK FARM, Cockeysville, Md.

RUPTURE CURED while you work You pay \$4 when cured. No cure, no pay. ALEX. SPEIRS, Box 844, Westbrook, Maine.

THE MILLER MANURE SPREADER:

The practical benefits following the use of manure spreaders in the country have led to a large demand for such machines throughout the entire United States. Various manufacturers have added such a machine to their line, and jobbers have seen the advantage of carrying them also.

The Miller Spreader has proved a winner in previous years, but 1903 has been improved in every particular where trouble has arisen. Malleable iron is used on this machine for every part where strength is required. A method has been devised for driving from both wheels, which gives double traction power. The cylinder is now made two inches larger than heretofore, and is made with eight beaters instead of six. A new end-gate, which can be raised or lowered at will from the driver's seat, does away with some of the objectionable features common to most manure spreaders. This machine is low down, which makes it very easy to load. There are other excellent and exclusive features, among which are the following:

It is just the right width to straddle corn-rows and leave all the land evenly covered with manure. This is a strong feature on corn-stubble land, owing to the fact that other machines cannot do good work without driving team and spreader wheels on the cut corn-hills, a thing that any farmer knows is impossible.

The Miller is the only spreader that will do perfect work in winter with manure from the stable daily. We have solid bottom, which is scraped clean every load; nothing can freeze to it, as in tread-power bottom machines.

It doubles the value of manure by covering two acres where you could only cover one by hand.

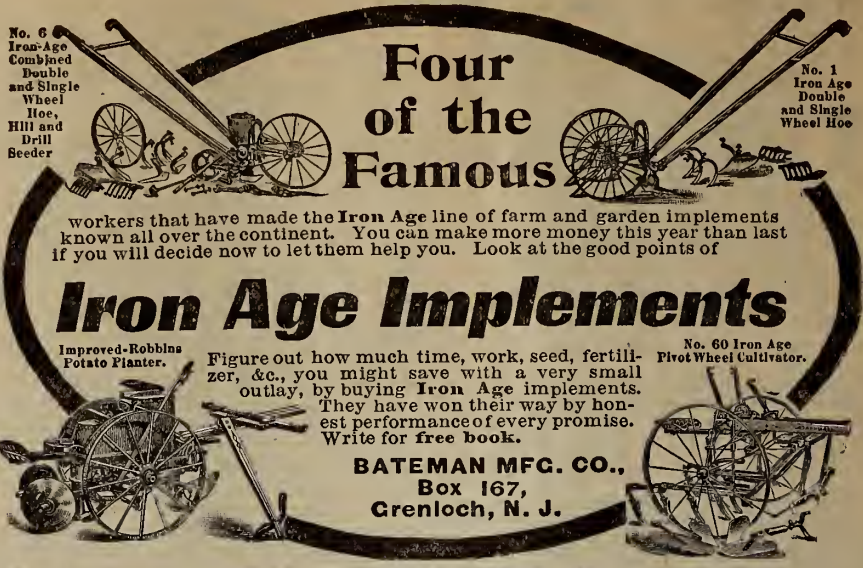
For further particulars, address The Newark Machine Co., Newark, Ohio.

A MUNIFICENT GIFT.

The Studebaker Bros. Manufacturing Company, of South Bend, Ind., has just presented to the Young Men's Christian Association of that city \$200,000 in cash, to be used in the construction and equipment of a magnificent new building for the uses of the Association. The building is to be a memorial to the original five Studebaker Brothers, who have always been closely identified with philanthropic and charitable work. This munificent gift will give South Bend one of the handsomest Young Men's Christian Association buildings in the United States.

THE DEMING CATALOGUE.

The 1903 Catalogue of the Deming Company of Salem, Ohio, is just off the press. It includes hand, bucket, knapsack, barrel, mounted and power sprayers. In certain sprayers of their line, notably the Century, Simplex, Peerless and Success Knapsack Sprayers, the mechanical agitation of the liquid, insuring the perfect mixing of poison with the water, is worked out to a nicety. The wide adaptability and general usefulness of the line cannot be realized without perusing the catalogue, as usual. It will be mailed to any one writing for it.



Four of the Famous Iron Age Implements

workers that have made the Iron Age line of farm and garden implements known all over the continent. You can make more money this year than last if you will decide now to let them help you. Look at the good points of

Iron Age Implements

Improved-Robbins Potato Planter. Figure out how much time, work, seed, fertilizer, &c., you might save with a very small outlay, by buying Iron Age implements. They have won their way by honest performance of every promise. Write for free book.

No. 1 Iron Age Double and Single Wheel Hoe. No. 60 Iron Age Pivot Wheel Cultivator.

BATEMAN MFG. CO.,
Box 167,
Crenloch, N. J.

JERSEY CATTLE

Bred from high-testing St. Lambert Cows.

LARGE YORKSHIRE HOGS.

The BACON BREED now leading all other breeds for making high-priced bacon.

INDIAN GAMES—The king of table fowls.

WHITE WYANDOTTES—The best general-purpose fowl.

WHITE LEGHORNS—All sold out.

Address

BOWMONT FARMS, SALBM, VA.

REGISTERED JERSEYS,

REGISTERED BERKSHIRES.

YOUNG STOCK OF BOTH KINDS
* * FOR SALE. * *

FOREST HOME FARM, - Purcellville, Va.

HOLSTEINS THAT PAY.

Purchasers are offered selections from our herd, both male and female; our cows are of the leading strains, including De Kols, Pauline Pauls, Mechthildes, Hengervelds, Netherlands, Aggies, etc., etc. They are all well bred and milking from 40 to 65 lbs. per day. Herd headed by Ury ALWINA Count Paul De Kol and DeKol 29 Butter Boy 3rd No. 2.

THOS. FASSITT & SONS, Ury Stock Farm, Sylmar, Md.

When corresponding with advertisers, always mention
The Southern Planter.



for this top buggy, piano body 20, 22 or 24 in. wide, seat has solid panel spring back. Wheels, choice of height and size, 3 or 4 bow top. Boot, storm apron, shafts and anti-rattlers.



Extension top surrey, has large full size body, wide roomy seats with solid panel spring backs and cushions. Axles 11-16 in. Lamps and fenders extra. **Every vehicle guaranteed for two full years.**



For this top buggy with **Guaranteed Rubber Tires**, piano body, roomy seat, solid panel spring back and spring cushion, 3 or 4 bow top. **The Most Wonderful Bargain** in a guaranteed rubber tired buggy ever offered. **Write for free catalogue.** It has large illustrations and full descriptions.



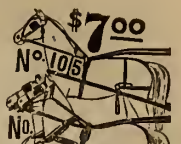
For this large, roomy phaeton, just what you want for solid comfort, wide, roomy spring cushion, solid panel spring back 23 in. high. Trimmed with heavy imported all wool broadcloth. Full patent leather fenders, large lamps, long distance axles. Retail for nearly twice our price.



For this high arched axle, low wheel, **Guaranteed Rubber Tired** driving wagon, open head springs, long distance axles, Bradley combers, Bailey loops, stick seat, rubber padded steps. Trimming fine whipcord or broadcloth. 21 other styles. **Don't buy until you see our catalogue and most wonderful offers.**



Stick seat driving wagon. Long distance axles, Bailey loops All complete.



No. 105. Single harness, Nick. or Im. rubber trim. \$7.00. No. 190. Dbl. harness, traces 1 1/4 in. \$14.60. 88 styles shown in Catalogue.

SEND FOR OUR CATALOG.

It illustrates and fully describes every kind of a vehicle and harness made. Cut this ad out and mail to us and we will mail the catalogue FREE.

MARVIN SMITH CO.,

55-57-59 N. Jefferson St., CHICAGO, ILL.

GREAT POULTRY BOOK FREE.

On another page of this issue of our paper will be found a new season's advertisement of the Cyphers Incubator Co., Buffalo, N. Y.



We wish to point out to those of our readers who have seen their annual books and catalogues in the past that the New Year

Book for 1903, entitled "How to Make Money with Poultry and Incubators," now being sent out, is in every way superior to its predecessors. Nothing has been left undone to make this Poultryman's Guide and Catalogue most entertaining and instructive, devoted exclusively to the real business of growing and marketing poultry for profit.

"How to Make Money with Poultry and Incubators," consists of 196 pages, 8 x 11 inches in size, is profusely illustrated, giving over 300 photographic views of many of the largest and most successful poultry plants in the United States, England, Germany, New Zealand and South Africa, and contains twelve special chapters, each written by an expert, treating of profitable poultry keeping in all branches, as follows: Starting with an Incubator, Handling Chicks in a Brooder, Feeding the Chicks, Duck Producing on a Large Scale, Broiler Raising, Profitable Egg Farming, The Egg and Poultry Combination, Egg and Fruit Farming, Scratching Shed, House Plans, Incubator Cellar and Brooding House Plans, Feeding for Eggs, and Standard Bred Poultry.

Everything is made so plain that it can be understood by all. Those of our readers who have never seen a "Cyphers" Annual Guide, and are interested in the latest developments in incubators, brooders, poultry foods and appliances, should write at once to the Cyphers Incubator Company's nearest office, Buffalo, N. Y., Chicago, Ill., Boston, Mass., or New York City, N. Y., and they will send a copy free, postage paid (during the next thirty days only), provided you mention this paper.

"I b'lieve in havin' a good time when you start out to have it. If you git knocked out of one plan, you want to git yerself another right quick, before yer sperrits has a chance to fall."—From "Lovey Mary," The Century, February, 1903.

Reg. HOLSTEIN-FRIESIAN

CATTLE of the Netherland, De Kol, Clothilde, Pietertje and Artis families. Heavy milkers and rich in butter fat. Stock of all ages for sale.

Reg. BERKSHIRES From noted strains, Imported Headlight, Lord Highclere and Sunrise.

DORSET SHEEP.

B. PLYMOUTH ROCK CHICKENS, Fifteen Cockerels for sale.

N. and W. and Southern R. R.

T. O. SANDY, Burkeville, Va.

JERSEY AND GUERNSEY CATTLE

Berkshire Hogs, young boars ready for service, and Pigs in pairs or trios not akin. Large, young Bronze Turkeys. A few Plymouth Rock and Brown Leghorn Fowls. All the above stock ready for shipment now. A FEW BEAUTIFUL FOX TERRIER PUPPIES AT \$5 EACH.

M. B. ROWE & CO., FREDERICKSBURG, VA.

POLAND-CHINAS.



TECUMSEH G, 49283.

Have sold out all pigs on hand and am now booking orders for pigs from my spring litters. Have a limited number of **YOUNG SOWS** in pig **FOR SALE.** Address

J. B. GRAY, FREDERICKSBURG, VA.

"THE OAKS" SHORTHORNS FOR SALE

2 Reg. Bull Calves; 2 Reg. Cows; 1 three-year-old Reg. Bull (immune) raised south of Petersburg. Va. All right in every particular.

B. B. BUCHANAN, Bedford City, Va.

The Venezuelan and Panama Canal situations are editorially discussed in the Review of Reviews for February. In addition to his comments on these very prominent topics of the hour, the editor gives his usual valuable survey of the month's important happenings, at home and abroad. Among the contributed articles there are two character sketches of exceptional interest; "Abram S. Hewitt, a Great Citizen," is the subject of a discriminating tribute from the pen of Edward M. Shepard, the New York lawyer and politician, who knew Mr. Hewitt intimately, while George Perry Morris reviews the too brief career of Mrs. Alice Freeman Palmer, the former president of Wellesley College and a leader in many intellectual movements. The art treasures of the late Henry G. Marquand, many of which were sold recently in New York at almost fabulous prices, are described in an illustrated article by Ernest Knauff. The latest developments in wireless telegraphy are recounted by Prof. A. Frederick Collins, while Mr. Thomas C. Martin describes the new Pacific cable lines—the all-American and the all-British. Prof. Frank A. Wilder gives much interesting information about the coal deposits of our great Northwest. The fullest statement yet published of the impending land reforms in Ireland is furnished by Mr. Walter Wellman, who has just returned from that country. The recent Taff Vale Railway decision in England on the rights and liabilities of labor unions in connection with strikes is reviewed by Mr. A. Maurice Low. "Some Taxation Problems and Reforms" is the subject of a comprehensive article by Secretary Commons of the National Civic Federation. "Some Cartoon Comments," "Leading Articles of the month," and the other regular departments, round out the number.

AN INEXPENSIVE COFFEE FRUIT CAKE.

To make coffee fruit cake, beat half a pound of butter to a cream; add one cupful of brown sugar. Dissolve a teaspoonful of baking powder in two tablespoonfuls of water; add it to half a pint of New Orleans molasses; add this to the butter and sugar; add a teaspoonful of allspice, one egg well beaten, a tablespoonful of cinnamon and one grated nutmeg. Mix a quarter of a pound of shredded citron, two pounds of seedless raisins and three-quarters of a pound of cleaned currants. Measure three cupfuls of pastry flour; take sufficient from it to flour the fruit thoroughly. Add half a pint of warm, strong coffee to the sugar mixture; then add the flour; beat until smooth; add the fruit, pour into well-greased cake pans, and bake slowly in a moderate oven.

"Don't you go an' git sorry for yerself. That's one thing I can't stand in nobody. There's always lots of other folks you kin be sorry fer 'stid of yerself. Ain't you proud you ain't got a hare-lip? Why, that one thought is enough to keep me from ever gittin' sorry for myself."—From "Lovey Mary," The Century, December, 1902.

ANNEFIELD HEREFORDS,

"PRINCE RUPERT," No. 79539.

Winner Sweepstakes at Kansas City, 1901. Herd rich in "Anxiety" blood.

BERKSHIRE HOGS

FINEST STRAINS OF BLOOD.

INSPECTION INVITED

CORRESPONDENCE SOLICITED.

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

CASTALIA HEREFORDS...

The breeding cows and herd bulls at "Castalia" have been selected with one aim; THE BEST, REGARDLESS TO COST. Herd headed by the \$3,000.00 Imported SALISBURY, assisted by LARS, JR. I have now for sale a very fine bunch of bull calves by these bulls, also a few females. Visitors are welcome and met at station.

Write your needs.

MURRAY BOOCOCK,

Keswick, Va.



BACON HALL FARM.

HEREFORD REGISTERED CATTLE

"TOP" BREEDING, CALVES NOT AKIN.

MOTTO—Satisfaction or no Sale.

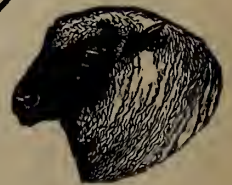
E. M. GILLET & SON, - Glencoe, Maryland.

C. C. Taliaferro,
NATIONS,
VA.
1902

"MOUNT SHARON
STOCK FARM."

Registered HEREFORD CATTLE
Registered SHROPSHIRE SHEEP
Registered POLAND-CHINA PIGS.

NOW OFFERS FOR SALE



HEREFORD CATTLE.—Calves, entitled to registration, \$75 to \$100. Grade Calves by "Sir Edward" \$25 to \$40.

SHROPSHIRE SHEEP.—Bucks, one year old and over, \$15 to \$20. Buck Lambs, July delivery, \$10. and \$12. Ewe Lambs, July delivery, \$8. and \$10.

POLAND-CHINA HOGS.—Pigs, six weeks old, \$5. Pigs, two or three months old, \$7.50. Pigs, five months and over, \$15 to \$20.

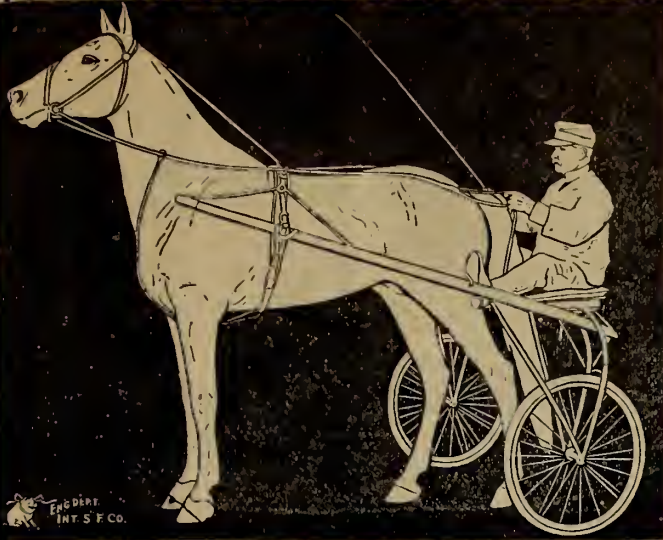
M. BRONZE TURKEYS.—Toms, \$4. Hens, \$3. Eggs, per sitting of 12, when in season, \$4.

MUSCOVY DUCKS.—Pure White Drakes, \$1.25. Pure White Ducks, \$1. Pairs, \$2.25; trios, \$3.

BARRED PLYMOUTH ROCKS.

ROUSE GESE.—Ganders, \$2.50. Geese, \$2.50. Eggs, per sitting, \$3.00

WILLIAM L. JR., No. 21058, half brother of Artell, will serve a limited number of mares for \$25 the season. Mares boarded at lowest figures per month.



DAN PATCH

Officially Timed at Readville, Mass., Sept. 23, in 1:59 1/5
Champion Harness Horse of the world.

This Engraving was made from a Photograph taken when ready to race.

THE \$60,000 PACING STALLION

Just purchased by M. W. Savage, Minneapolis, Minn., as one of the leading stallions for his "International Stock Food Farm." The purchase of Dan Patch was a tremendous sensation in horse circles, and was taken up and given columns of notices in all of the leading dailies throughout the entire country. The price was over Three times as much as was ever paid for a pacer, and by far the largest price paid for a harness horse for a long term of years. This farm is now one of the most famous horse-breeding farms in the world, as Mr. Savage owns the Three Fastest Stallions ever owned by one man or by one farm, Dan Patch 1:59 1/5—Directum 2:05 1/4—Roy Wilkes 2:06 1/2. The establishing of this farm in Minnesota, 12 miles from Minneapolis, means a great deal for the live stock interest of the Northwest as well as for the entire world. It will add thousands of dollars every year to the live stock interests of Minnesota alone, and Mr. Savage expects to prove to the world that high-class harness horses can be raised in the Northwest as well as in other parts of the United States. You are cordially invited to visit "International Stock Food Farm" whenever you are in this vicinity. You will find the celebrated "International Stock Food" 3 FEEDS FOR ONE CENT fed every day to our Stallions, Brood Mares, Colts, Race Horses and other stock. "International Stock Food" has the largest sale in the world for Horses, Cattle, Sheep, Hogs, Colts, Calves, Lambs and Pigs. Over 50,000 dealers sell it on a "Spot Cash Guarantee" to Refund Your Money if the results of feeding it are not perfectly satisfactory to you. It will cause your colts and other young stock to grow rapidly even during the winter. Keeps them free from worms and tones up and strengthens the entire system. **It Will Pay You To Test It At Our Risk On Your Stock.**

A \$3000.00 STOCK BOOK FREE

IT CONTAINS 183 LARGE ENGRAVINGS OF HORSES, CATTLE, SHEEP, POULTRY, ETC.

The Cover of this Book is a Beautiful Live Stock Picture Printed in Six Brilliant Colors. Book is 6 1/2 by 9 1/2. See engraving for greatly reduced design of cover. It cost us \$3000 to have our Artists and Engravers make these life Engravings. This Book contains a Finely Illustrated Veterinary Department that will Save You Hundreds of Dollars. It describes common Diseases, and tells how to treat them. It also gives Description, History and Illustrations of the Different Breeds of Horses, Cattle, Sheep, Goats, Hogs and Poultry. It contains testimonials and Life Engravings of many very noted Animals. The Editor Of This Paper Will Tell You That You Ought To Have This Book In Your Library For Reference.

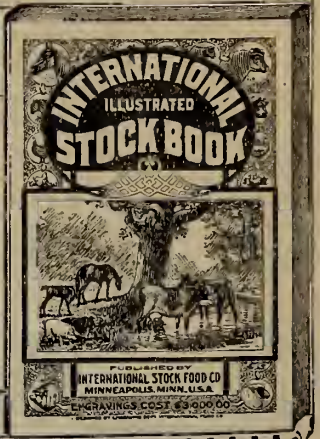


Largest Stock Food Factory in the World.
Capital Paid in, \$1,000,000.
We Occupy 62,000 Feet of Floor Space.

International Stock Food Co., MINNEAPOLIS, MINN., U. S. A.

We employ over 300 people and have Hundreds of Thousands of Testimonials from Farmers and Stockmen.

TEST 3 FEEDS FOR ONE CENT ENTIRELY AT OUR RISK.



This Book Mailed Free, Postage Prepaid, if You Write Us (letter or postal) and Answer These 2 Questions:
1st.—Name This Paper. 2d.—How Much Stock Have You?

Write us today for book.

SPLIT HICKORY vs. SAWED



A vehicle is only as strong as its weakest part. A wheel, with hub, spokes and felloes made from the strongest wood, if the wood is sawed across the grain, has little strength. The "Split Hickory" line of vehicles, as their name indicates, is constructed of split hickory not sawed—and is of greatest strength and endurance and uniformly strong in all its parts. To obtain these



splendid, strong and stylish vehicles, send to Station 41, the Ohio Carriage Manufacturing Company, Cincinnati, O., for complete illustrated catalogue. Their prices are low, quality high, and their thirty days' free trial offer is genuine and bona fide.



Japan Plums

And all other desirable standard and new varieties of PLUMS, APPLE, PEACH, PEAR and ORNAMENTAL TREES, SHRUBS, ROSES, Etc.

HEADQUARTERS FOR TENNESSEE PROLIFIC STRAWBERRY.

The Most Reliable Variety Ever grown in the South.

Three hundred and fifty acres under cultivation. Write us if you contemplate planting. Catalogue free.

AGENTS WANTED. WRITE FOR TERMS.

W. T. HOOD & CO.,

OLD DOMINION NURSERY.

RICHMOND, VA.

Mention the Southern Planter in writing

The American Free Trade League send us copy of the Free Trade Almanac, for which we return thanks. It would do the hide-bound protectionists good to study the matter contained in this issue.

TAKEN ORDERS.

When Miss Lucy wanted particularly fine chickens, she always drove over to see old Aunt Etta, who had a scrap of a farm and made a specialty of raising chickens for the quality folks.

One day, as the lady stopped in front of the cabin, Aunt Etta came out and hung over the gate.

"Chickens!" she exclaimed in answer to her customer's request,—"chickens! Why, law, Miss Lucy, don't you all know there's been a camp-meetin' and preachers' conference down here? Why, I ain't got one chicken left. They're all done entered the ministry."—N. E. ALLENDER, in *February Lippincott's*.

THE GROWTH OF THE SEED HOUSE.



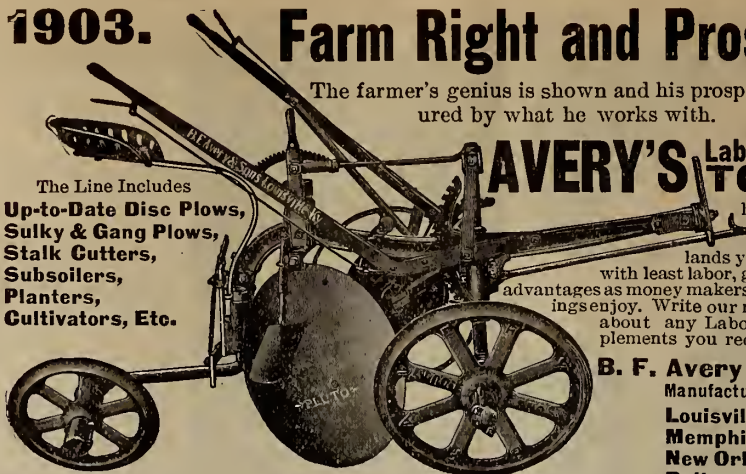
The above cut is a faithful picture of the extensive new building recently occupied by J. Bolgiano & Son, of Baltimore, Md. This concern is one of the oldest and most substantial in the East, with a record and reputation extending far back into the very infancy of modern seed business. Their growth has been most commendable, because it has been forced upon them more by the excellency of their products than by a grasping desire to capture everything. Some of their most noted specialties this season are the New Century Tomato, Ruby King Radish, New Leader Cabbage and the New Early Fortune Cucumber. In their stock is also to be found fresh tested seeds of the Rocky Ford Cantaloupe, Valentine Beans, Alaska and Gradus Peas, and a general line of farm and garden seeds. Look up their advertisement elsewhere in our paper and write for the catalogue, kindly mentioning where you saw this notice.

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

1903. Farm Right and Prosper.

The farmer's genius is shown and his prosperity measured by what he works with.

The Line Includes
**Up-to-Date Disc Plows,
 Sulky & Gang Plows,
 Stalk Cutters,
 Subsoilers,
 Planters,
 Cultivators, Etc.**



AVERY'S Labor-Saving TOOLS

have the modern idea, make your lands yield the most with least labor, give you such advantages as money makers in other callings enjoy. Write our nearest house about any Labor-Saving Implements you require.

B. F. Avery & Sons,
 Manufacturers,
 Louisville, Ky.
 Memphis, Tenn.
 New Orleans, La.
 Dallas, Tex.

GLEN ALLEN HERD OF

..ABERDEEN-ANGUS CATTLE..

Headed by ALLENHURST KING IV 47199,

Assisted by VICTOR G., No. 37693.

I am now offering for sale a few choice young bulls of serviceable age, at a bargain. Any one wanting bulls from prize-winning families at a moderate price, will save time and money by calling on or addressing

GLEN ALLEN STOCK FARM, W. P. ALLEN, Prop., Walnut Hill, Va.

SUNNY HOME HERD OF

ABERDEEN-ANGUS CATTLE.

BARON ROSEBOY (The great son of the world-famous GAY BLACKBIRD) in service.

Nearly all the leading families of the breed represented by females sired by the most famous bulls of the age. We challenge comparison on both as to individual excellence and pedigree. Another car of grand cows just arrived, personally selected from one of the best herds in central Illinois. The tops out of one hundred head. Six animals of the same family and strain as ROSEGAY (for two years the champion of America), others equally good. All young stuff of weaning age sold; am booking orders for future delivery.

Write your wants; we are bound to please you.

A. L. FRENCH, PROPRIETOR, FITZGERALD, N. C.
 Rockingham Co., 24 miles south-west of Danville, Va., on D. & W. Ry.

POLAND-CHINA BOARS

THE KIND THAT GETS BIG.

Sired by son of PROUD PERFECTION. Have now 8 on hand, from 2 to 3 months old. Price, \$10 for 2 months old, \$11 for 3 months.

Expressage prepaid to Virginia points. Your money back if you are not satisfied.

BULLFIELD FARMS, - - - Doswell, Virginia.

THE ADVANTAGES OF FARM LIFE

It is the farmers' boys who are most likely to succeed, whether in business or in professional life. Spending most of their time under the open sky, breathing fresh air, and eating simple food, they are more likely to have vigorous health and strong constitutions than are their city cousins. Brought into constant contact with nature, they absorb a great deal of useful knowledge, and acquire habits of observation. Then, too, the regular farm work, the "chores," and numberless other little things keep them well occupied, and enable them to feel that they are earning their way, thus giving to them a sense of independence and cultivating a spirit of self-reliance and manliness.

The performance of a deal of drudgery is an indispensable preparation for all real success in life, whatever the occupation. A boy who is afraid of work or of soiling his hands need not expect to accomplish much in the world. Country boys have their full share of fun, but there are many disagreeable duties on a farm which farmers' boys learn to accept as a matter of course. Edward Eggleston, speaking of the value of his farm training when a boy, once said to me: "I learned one thing of great value, and that was to do disagreeable things cheerfully."—**JOSHUA STRONG**, in "Uncle Sam's Talks on Our Country," in February "Success."

FAMOUS PRESCRIPTION FOR ALL HOUSEKEEPERS.

Dr. O. B. JOYFUL,
21 Sunshine Avenue.

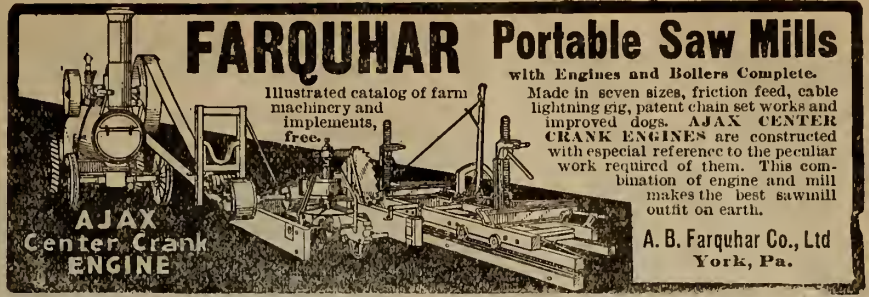
Office Hours: 6 A. M. to 12 P. M.

A little dash of water cold,
A little leaven of prayer,
A little bit of sunshine gold,
Dissolved in morning air,
Add to your meal some merriment,
Add thought for kith and kin,
And then as a prime ingredient
A plenty of work thrown in;
Flavor it all with essence of love
And a little dash of play;
Then a nice old book and a glance
above

Complete the happy day.
Take daily, and repeat.

Patrick Murphy was taking a walk one Sunday through a field where cows were grazing. The bull took after him, and before he could get over the fence the bull caught him with its horns and pitched him right over into the adjoining field. When he got himself gathered up, the bull was standing on the other side of the fence, scraping and boozing. "Oh, be me sowl," said Pat. "ye needn't stand there apologizing, for ye intinded it all the toime."

Ruth was watching mamma for the first time prepare some hominy for breakfast. "What is that, mamma?" she asked. "It's hominy," said mamma. Ruth still looked puzzled, and pretty soon she said again, "What is that?" "Hominy," mamma answered once more, and somewhat impatiently Ruth looked at her and said, "Why, I don't know how many!"



FARQUHAR Portable Saw Mills
with Engines and Boilers Complete.
Made in seven sizes, friction feed, cable lightning rig, patent chain set works and improved dogs. **AJAX CENTER CRANK ENGINES** are constructed with especial reference to the peculiar work required of them. This combination of engine and mill makes the best sawmill outfit on earth.
A. B. Farquhar Co., Ltd
York, Pa.

Illustrated catalog of farm machinery and implements, free.

AJAX Center Crank ENGINE

RUMSEY-WILLIAMS COMPANY



GASOLINE ENGINES and GRAIN THRESHERS.
ST. JOHNSVILLE, NEW YORK.

SIR JOHN BULL and UNCLE SAM

Have become so famous that I found a multiplication of their progeny necessary to the filling of orders; hence I have added a large



number of purest-bred **Imported and American Sows**, no akin to my old herd, and most of them now in farrow to **Imported Berkshire Boars** of a new strain.

HUNTING DOGS and PUPS FOR SALE.

A DURHAM BULL CALF, a picture, cheap. Write for particulars.

THOS. S. WHITE, Fassifern Stock Farm, Lexington, Va.

CISMONT DORSETS..

CISMONT STOCK FARM offers well developed young Dorsets of the best blood of England and America.

Prices reasonable. **G. S. LINDENKOHL, Keswick, Albemarle Co., Va.**



RIPPLEY'S Improved Steam Cookers
sold under a guarantee for cooking feed, heating Poultry, Hog and Dairy houses, heating water in stock tanks or cooking feed 200 ft. from Cooker. Are made of boiler steel; no flues to rust or leak. Can be used outside or in house. Safe as a stove. Will cook 25 bu. of feed in 2 hrs. Used and endorsed by Wis., Ia., Va., Ga. and Ont. State Experiment Stations. First premium at Omaha and Toronto Expositions. Highest honors at Tex., Ill., Ind., O. Wis., Neb., Ia. and S. Dak. State Fairs. So simple children run them. We manufacture 5 styles, 16 sizes of Cookers. Prices \$5.00 to \$45.00. We pay freight on Steam Cookers. Cooker and Breeders' Supply Catalogue and prices mailed free.
RIPPLEY HARDWARE CO., Cooker Mfrs., Box 70 GRAFTON, ILLINOIS.

When corresponding with Advertisers, always say that you saw their advertisement in The Southern Planter.

One very cold day Tom, in his first trousers, was walking along with his tiny overcoat turned back to its utmost limit. "Tom," said his father, meeting the child, "button your coat." But the boy demurred. "Look at mine," added his father. "Yes," said Tom, ruefully, and obeying under protest, "but everybody knows that you wear trousers!"

A minister whose education in business matters had been sadly neglected had a small charge, and eked out a living by writing for the papers. One day he received a check for \$15, made payable to his order. He took it to the local bank, and, handing it in, was told to indorse it. He hesitated a moment, and then, taking up the precious document, wrote on the back: "I heartily indorse this check."

TOWNS MADE BY RAILWAYS.

To-day towns do not grow merely because of their location, and this factor of location will become less and less important as the years go by. Chicago is situated upon the most impossible an unlovely of all places of human habitation. She is simply a city of transportation and is no better than her rails and boats, though by her rails and boats she lives in every Western State and Territory. The same is true of St. Louis and the vast Southwest. One railroad recently planned for Western extension, and laid out along its lines the sites of thirty-eight new towns, each of which was located and named before the question of inhabitants for the towns was ever taken up. Another railway in the Southwest has named fifty cities that are yet to build, and still others have scores of communities which in time are to be the battlegrounds of human lives, the stages of the human tragedy or comedy. The railways have not only reached, but created provinces; they have not only nourished, but conceived communities.

Maine Lawyer—What is your opinion of the character of Deacon Blank?

Witness (cautiously)—I never heard nothin' agin him.

"Don't you know him to be an honest man?"

"Wall, he's be'n fair an' square in all his dealin's with me, and with others as far as I know."

"Isn't that sufficient to prove him a man of sterling integrity?"

"Wall, I dunno. I never traded horses w th him."

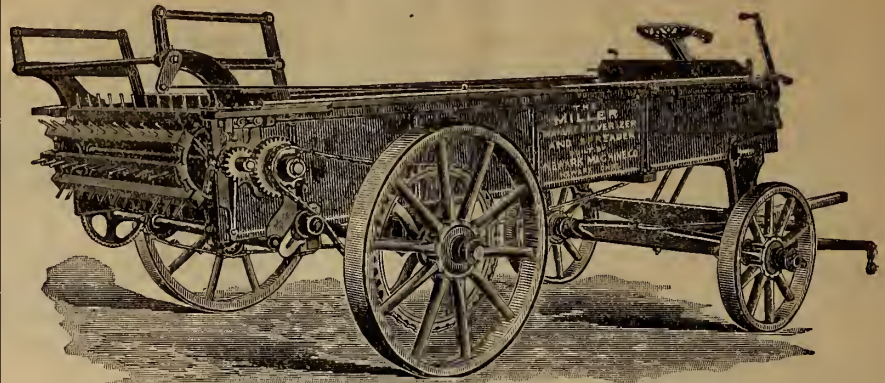
"You never kin tell which way any pleasure is a' comin'. Who ever would 'a' thought, when we aimed at the cemetery, that we'd land up at a first-class fire?"—From "Lovey Mary," The Century, February, 1903.

"The way to git cheerful is to smile when you feel bad, to think about somebody else's headache when yer own is 'most bustin', to keep on believin' the sun is a-shinin' when the clouds is thick enough to cut."—From "Lovey Mary," The Century, January, 1903.

Mention the Southern Planter when corresponding with advertisers.

The Miller MANURE SPREADER and PULVERIZER

Is a machine every farmer should have. It will SAVE YOU its cost in a short while. IT MAKES FRIENDS WHEREVER SOLD.



Agents wanted. Write for catalogue. THE NEWARK MACHINE CO., - Newark, Ohio. Mention the SOUTHERN PLANTER when you write.

Made for the Man Who Wants the Best.



The Great Western Manure Spreader

spreads all kinds of manure, fresh, well rotted, fine, coarse, hard, mixed, full of straw, full of corn stalks, etc.

Will also spread compost, lime, land plaster, salt, wood ashes, cotton seed and hulls, and in every case do it quicker, better and more evenly than it can be done by hand. Spreads as much manure in one day as twelve men can load and spread by hand and the job is much better when done. Spreads the largest load a team can haul in 2 to 4 minutes. It makes the same amount of manure go three times as far and at the same time produce better results.

REGULATED to spread much or little while in motion. Puts manure back into position with crank. ENDLESS APRON—always ready to load. No turning it on thick on poor spots—2 to 3 loads per acre. COMBINED HOOD AND END GATE keeps manure away from beater while loading and acts as hood in spreading. Catches all flying sticks, stones, etc. Front wheels cut under, and machine can be turned in its own length. Made in two styles and four sizes. Capacity 30 to 70 bushels. It saves time, labor and money and will double the crops. Makes all manure so fine and spreads it so evenly that it is immediately available for plant food. LARGE CATALOGUE 10 by 13 inches, with 8 large cuts shows the spreader perfectly and describes it fully. Tells also how to apply manure to secure best results. Mailed free. SMITH MANURE SPREADER CO., 55 N. JEFFERSON ST., CHICAGO, ILL.

BLACK-LEG-INE

Pasteur Blackleg Vaccine ready for use. EACH DOSE SEPARATE.

Single Blacklegine (for common stock): 10 dose box, \$1.50; 20 dose box, \$2.50; 50 dose box, \$6.00. Double Blacklegine (for choice stock) \$2.00 for 10 doses, first lymph and second lymph inclusive. Blacklegine Outfit for applying Blacklegine, 50 cents.

Pasteur Vaccine Co.,

CHICAGO - NEW YORK - FT. WORTH - SAN FRANCISCO.

SPRAYING IS EASY

and you have an outfit always ready at a moment's notice for a small or large job in the

GARFIELD KNAPSACK SPRAYER.

Best sprayer made for nine-tenths of all work, as Cotton, Tobacco, Potatoes, Gardens, Shrubby, etc. Easily carried and worked, simple and durable. Copper tank concealed to fit back, and all brass pump. Nothing to corrode. We also make the Empire King and Orchard Monarch, mounted sprayers for large operations, and others for all purposes. Fully described in free catalog. Write for it. FIELD FORCE PUMP CO., 223 Eleventh St., Elmira, N.Y.



THE GENTLEMAN ON THE PLANTATION

SHOULD HAVE AS MANY COMFORTS AND CONVENIENCES AS THE GENTLEMAN IN THE CITY.

With a **WIND MILL** or **GASOLINE ENGINE** farm work can be made easy and at a small cost.

You can **CUT** and **GRIND FEED**, **SAW WOOD**, **THRESH GRAIN**, **PICK PEANUTS**, **SHELL CORN**, **MAKE CIDER**, **PUMP WATER FOR STOCK**, AND

LAST BUT NOT LEAST

PUT WATER IN YOUR OWN HOUSE.

STRATTON & BRAGG,

20 and 22 N. Sycamore St., PETERSBURG, VA.

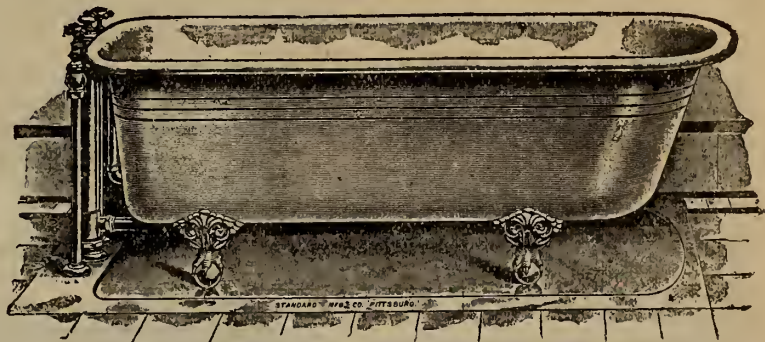
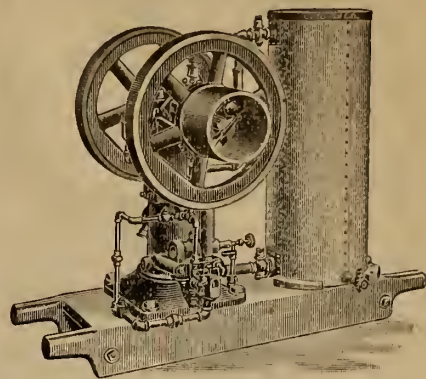
You can have your Bath Tub, Water Closet and Hot and Cold Water in your own Home.

WE CAN FIT YOU UP FROM START TO FINISH.

We have our own competent and skilled workmen, which we send out to install our fixtures.


NO DISTANCE TOO FAR.

Let us figure with you.



IVANHOE POULTRY YARDS

Breeders of

 **Exhibition Barred
Plymouth Rocks**

ENGLISH CARRIERS AND HOMING PIGEONS.

For information, address

Ivanhoe Poultry Yards, Box 258, Richmond, Va.

ADVANTAGES OF CONSOLIDATIONS OF SCHOOLS.

The educational problem of the present is the problem of the rural school. The cry has gone up for longer term, better supervision, better teaching, better houses, with improved equipment, including well selected libraries. The demand is for a school that shall be in every respect the center of a richer social life. This can never be so long as we have so many small schools. At the very basis of all reform of the rural school is the problem of consolidating small schools into larger ones centrally located. Consolidation of rural schools is made all the more necessary in the South because of the great multiplicity of schools resulting from separate schools for the two races. In view of our problem, it is of interest to see the results of consolidation in other States.

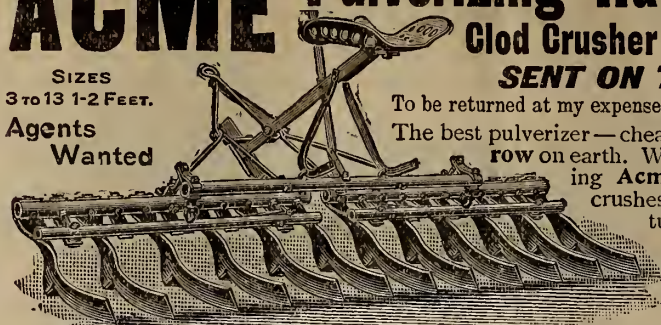
A summary made up from the reports printed and written from the eighteen States in which consolidation has been tried, shows the following advantages accruing from the consolidation of small schools and the transportation of pupils at public expense:

1. The health of the children is better, the children being less exposed to stormy weather, and avoiding sitting in damp clothing.
2. Attendance is from 50 to 150 per cent. greater, more regular, and of longer continuance. There is neither tardiness nor truancy.
3. Fewer teachers are required, so better teachers may be secured and better salaries paid.
4. Pupils work in graded schools and both teachers and pupils are under systematic supervision.
5. Pupils are in better school houses, where there is better heating, lighting and ventilation, and more appliances of all kinds.
6. Better opportunity is afforded for special work, such as music, drawing, etc.
7. Cost in nearly all cases is reduced. This includes cost and maintenance of school buildings, apparatus, furniture, and tuition.
8. School year is often much longer.
9. Pupils are benefitted by a widened circle of acquaintances and the culture resulting therefrom.
10. The whole community is drawn together.
11. Public barges used for children in daytime may be used to transport their parents to public gatherings in the evenings.
12. Transportation makes possible the distribution of mail throughout the whole township daily.
13. Finally, by transportation the farm becomes, as of old, the ideal place in which to bring up children, enabling them to secure the advantages of centers of population and spend their evenings and holiday time in the country in contact with nature and work, instead of idly loafing about town

The Parson—Your wife, sir, is trying to run my church.
 Witherby—If that is really the case, the only thing for you to do is to join my poker club.

ACME Pulverizing Harrow
Clod Crusher and Leveler
SENT ON TRIAL

SIZES
 3 to 13 1-2 FEET.
Agents Wanted



To be returned at my expense if not satisfactory. The best pulverizer—cheapest **Riding Harrow** on earth. We also make walking **Acmes**. The **Acme** crushes, cuts, pulverizes, turns and levels all soils for all purposes. Made entirely of cast steel and wrought iron—**indestructible**.

Catalog and Booklet, "An Ideal Harrow," by Henry Stewart, mailed free. I deliver free on board at New York, Chicago, Columbus, Louisville, Kansas City, Minneapolis, San Francisco, etc. Address **DUANE H. NASH, SOLE MANUFACTURER** - MILLINGTON, NEW JERSEY. **PLEASE MENTION THIS PAPER.**

POPULAR TOOLS FOR MARKET GARDENERS

<p>SEE SEED DROP Straight rows at uniform and perfectly regulated depth and distance apart.</p>	<p>NEW UNIVERSAL Double Wheel Hoe, Cultivator, Rake, and Plow. Adjustable Arch.</p>	<p>NEW UNIVERSAL Drill & Cultivator. The only implement made which can be used as seeder and cultivator. 1 or 2 wheels as desired. Quickly changed.</p>
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POPULAR PRICES. 1903 catalogue of latest styles now ready. Free. **AMES PLOW COMPANY, 56 MARKET STREET, BOSTON, MASS.**
 FOR SALE BY **GRIFFITH & TURNER CO., BALTIMORE, MD.**

RODERICK LEAN Implements Famous for good work. A cent spent for a postal requesting illustrated catalogue will save you dollars in the purchase of Spike-tooth, Spring-tooth and Disc Harrows or Land Rollers. Don't buy until you learn why the **RODERICK LEAN** are superior to any other.

RODERICK LEAN MFG. CO., Mansfield, O.

ASSETS, \$900,000.

Virginia Fire and Marine Insurance Company, of Richmond, Va.

Insures Against Fire and Lightning.

ALL DESCRIPTIONS OF PROPERTY IN COUNTRY AND TOWN, PRIVATE OR PUBLIC, INSURED AT FAIR RATES. ON ACCOMMODATING TERMS.

AGENCIES IN EVERY TOWN AND COUNTY.
WM. H. PALMER, PRESIDENT. W. H. M'CARTHY, SECRETARY.

* VIRGINIA DIVISION. *

Farmers Mutual Benefit Association.

A Fire Insurance Association, chartered by the State for the farmers of Virginia, under an amended and well protected plan.

Insures in counties surrounding and accessible to Richmond, against Fire and Lightning, only country property—no stores or unsafe risks. Policy holders amply secured—all losses paid. Average cost per year less than other plans, and a great saving to farmers. Amount of property now insured, \$330,000, and increasing yearly. Estimated security in real and other estate, \$750,000.

For further information, address, **CHAS. N. FRIEND, General Agent, CHESTER, VIRGINIA.**
MENTION THIS JOURNAL.

BILTMORE FARMS, - BILTMORE, N. C.

Headquarters for GOLDEN LAD JERSEYS,

Also get of TREVARTH and GEN. MARIGOLD. ❀ ❀ ❀

GOLDEN LAD'S SUCCESSOR, First and sweepstakes over all at the Pan-American Exposition, the champion JERSEY BULL OF AMERICA, and out of Golden Ora, our great prize-winning cow, both born and developed on these Farms, is among our service bulls.

Biltmore Jerseys are a combination of large and persistent milking qualities with an individuality that wins in the show ring.

SPECIALTY. Write for descriptive circular of the best lot of young bull calves ever offered, both for breeding and individuality. They are by noted sires and out of large and tested selected dams. Many of these calves are fit to show and win in any company.



BILTMORE POULTRY YARDS.

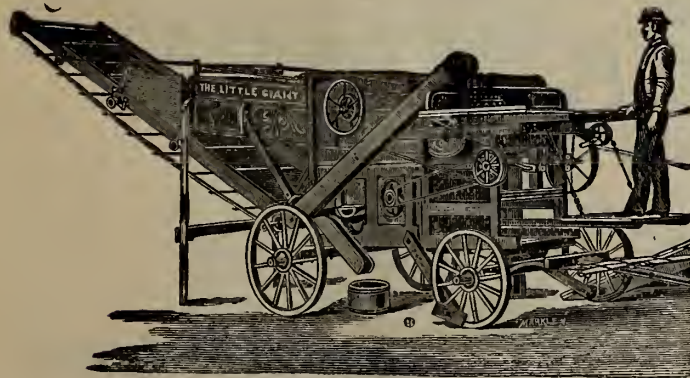


SPECIALTY. Write for descriptive circular of eggs from our prize-winning pens. Over 50 yards to select from, made up of the winners at the leading shows for the last two seasons. If you want winners you must breed from winners.

Headquarters for the best IMPORTED ENGLISH BERKSHIRES.

APPLY TO BILTMORE FARMS, BILTMORE, N. C.

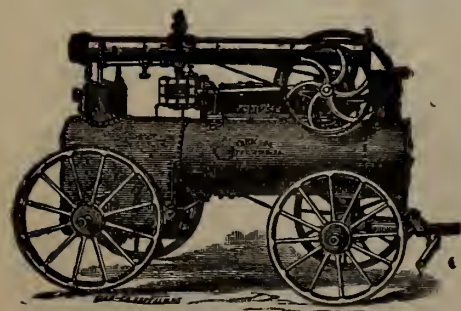
The most popular Machine in use for Peanut Picking and Grain Threshing are the



**HEEBNER'S,
LITTLE GIANT AND
PENNSYLVANIA**

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

**RUBBER, LEATHER
and
GANDY BELTING.**

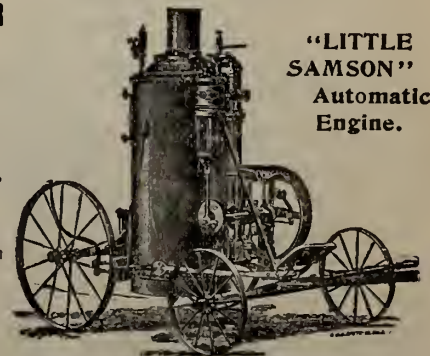


**FRICK'S "ECLIPSE"
ENGINES and BOILERS.**

ERIE ENGINES and BOILERS.

**THE CELEBRATED
"CHASE" SAW MILLS
and**

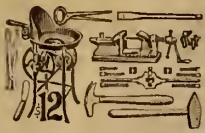
"DE LOACH" MACHINERY.



**"LITTLE
SAMSON"
Automatic
Engine.**

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

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



\$8.50
for 40 ft. Hay Carrier outfit. One carrier, 1 fork, 13 rafter hooks, 180 ft. rope, 5 floor hooks, 3 pulleys.



\$18.60
for this 12 16 all steel disc harrow; has genuine Laidow bumpers. Dust proof oil tubes.



\$2.78
Made in 8 sizes for this sicle grinder; grinds heel and point at same time. Grinds 6 ft sicle in 10 min. With 1 stone for sicles \$2.78. With 2 stones for grinding all kinds of tools, \$3.10.

\$2.80 for hand pump No. 151 with cylinder ready for use, with windmill head \$3.60.



\$16.50 for this 8 t. Steel Mill; easleat running and strongest made. All sizes, 8 to 16 feet.

For this complete set of 15 blacksmith tools. A wonderful bargain. **\$5.40** buys this complete set of 23 carpenter's tools and chest. **OUR CATALOG** illustrates, describes and prices all kinds of tools for carpenters and blacksmiths. We sell any tool separate. We save you 50% **Send for Our Catalogue**

Most Perfect Made. Other style discs for \$15.25. We save you about 7-9 in price. Postage is 15c, but if you will cut this ad out and send it to us we will mail the catalog **FREE.**

95c. for No. 1 kitchen pump, with cylinder. 190 styles and sizes pumps, every kind made, at one-half retail prices. All kinds of pipe fitting. **MARVIN SMITH CO.,** 55-57 N. Jefferson St., CHICAGO, ILL.

USELESS TRICKS FOR FARMERS.

- To try to farm without a judicious application of manure to your lands.
- To buy what you do not need because it is cheap—or nice.
- To plant more acres than you can properly take care of in the way of cultivating because you wish to have a 'big' crop.
- To expect to grow crops without due attention being given to their cultivation.
- To expect to grow good crops from poor seed.
- To expect to have good farm stock without feeding and giving attention to it.
- To expect to have good milch cows without providing for their comfort at all seasons.
- To leave your farm tools exposed to the weather.
- To lounge about the village store or postoffice when the weeds are growing in your crop.
- To talk of what your farming operations will be next year while you are doing nothing this year.
- To plant fruit trees and then allow the cattle to destroy them.
- To leave your neighbors' gates open and then expect yours to be shut always.
- You thus teach a bad lesson by your own example.
- To elect to office men who cannot take care of themselves by the ordinary pursuits of life.
- To be surrounded by mud when you can easily have good paths about your premises.

FRANK MONROE BEVERLY.
Dickenson Co., Va.

QUICK PROFITS IN POULTRY.

With the exception of strawberries, says Prof. A. G. Gilbert, it takes three years to realize on small fruits; a milch cow does not approach her full production short of three and a half years; apple trees do not begin to bear freely short of seven or eight years. How about the hen? Three weeks from the setting of the hen you have a hatch of chickens; from four to four and a half months from hatching the cockerels are ready for the market, and in five to five and a half months the pullets will begin to lay. Add to this the fact that in cities at the present time fresh laid eggs are selling at 30 to 35 cents a dozen, and it is clearly demonstrated that poultry-raising well-managed is one of the most profitable branches of farming.

Author—My book, sir, will be in existence long after you are forgotten.

Critic—Yes, I should say that it is likely to escape the wear and tear of excessive reading.



How are Your Eyes?

We are the largest optical establishment South, and give proper adjustment of SPECTACLES and EYE GLASSES. Complete manufacturing plant on the premises. Mail us the pieces and we will from them duplicate your Glasses. Glasses by mail our specialty.

Our PHOTO DEPARTMENT is also complete with CAMERAS, KODAKS and PHOTO SUPPLIES. Developing and printing finely executed.

Our line of GRAPHOPHONES, with latest records. OPERA GLASSES, FIELD GLASSES, Incubator and Dairy THERMOMETERS, etc., etc., is also complete. Lowest charges in all cases.

THE S. GALESKI OPTICAL CO., 9th and Main Sts., Richmond, Va.

THE SEABOARD AIR LINE RAILWAY

OFFERS PROFITABLE INVESTMENTS TO

**THE MANUFACTURER,
THE STOCK RAISER,
THE DAIRYMAN,
THE FRUIT GROWER,
THE TRUCKER.**

WHERE YOUR LABOR IS NOT IN VAIN.

Would a country where work can be carried on the entire year and where large profits can be realized interest you?

The **SEABOARD** Air Line Railway traverses six Southern States and a region of this character. One two cent stamp will bring handsome illustrated literature descriptive of the section.

J. B. WHITE, EDW. F. COST, CHARLES B. RYAN,
Gen. Industrial Agt., Portsmouth, Va. Traffic Mgr. Gen. Pass. Ag., Portsmouth, Va.

When you write to an advertiser, always say you saw the advertisement in **THE SOUTHERN PLANTER.**

SHELBURNE'S

Is the BEST WAREHOUSE

in Richmond, the BEST MARKET for all grades of Tobacco. It is the home of sun and air cured Tobacco and headquarters for flue-cured and shipping types. Here are located the head offices and stemmeries of all the large corporations, Regie representatives and the largest number of independent factories and buyers in the United States.

SHELBURNE'S WAREHOUSE

Has the largest lighted space, insuring equal attention to every pile. Ample accommodations in every way for all our customers.

Correspondence solicited.

SILAS SHELBURNE & SON, Props., 12th and Canal Sts., RICHMOND, VA.



THE RICHMOND PLUMBING AND MANTEL CO., 26 N. Ninth Street, RICHMOND, VA.,

Has just received
an entirely new
Stock and com-
plete line of

**STOVES, RANGES, FURNACES,
MANTELS, GAS and ELECTRIC
FIXTURES, FILTERS, TILING and
FIRE-PLACE TRIMMINGS.**

We are contractors for

**PLUMBING, TINNING, SHEET-METAL
WORK and ELECTRIC WIRING.**

Correspondence Solicited.

CALL AND INSPECT OUR SHOW-ROOMS.

INVENTIONS WHICH HAVE BROUGHT WEALTH.

BY MARY WASHINGTON.

No. 1.

In rendering the records of modern inventors in the United States, two points strike me especially about them—first, that the great majority of them are mechanics, or at least, plain, practical men, without scientific training; and secondly, that they have a much easier and more prosperous fate than the inventors of past ages, few of whom reaped any pecuniary reward, or even obtained recognition and appreciation of their services during their lifetime.

Among the long list of men in the United States who have made useful and important inventions during the last quarter of the 19th century, few of them except Dr. Alexander Graham Bell (inventor of the telephone) enjoyed the advantages of early scientific training, although those who had a strong bent that way, managed to pick it up, to some extent, in later life.

In studying the career of Dr. Bell, it is very interesting to note how his previous experience both in his studies and life work, and even in those of his father before him, seemed to pave the way to his great invention. His father, Dr. Alexander M. Bell, was an educator of deaf mutes, born in October in 1819. In 1843, he became a lecturer on elocution and voice culture in the University of Edinburgh and in New College, but his principal work was instructing deaf mutes. In 1870, he removed to Camden, and in 1881, settled in Washington City. He published many works on elocution and phonetics, but was chiefly distinguished as the author of "Visible Speech," a method highly successful in teaching deaf mutes to speak. His son, the renowned Alexander G. Bell, was born in Scotland March 3d, 1847. He was educated in Edinburgh, but went to London in 1867, and to Canada in 1870. In 1872, he introduced his father's system of deaf mute instruction into the United States, and was made a Professor in Boston University. After having experimented for years on the transmission of sound by electricity, and devised various apparatus for the purpose, he, at length, produced the telephone which he exhibited in Philadelphia, in 1876, and this seemed a fitting climax to all his previous studies, efforts and labors which had all had a bearing on the human voice and on electricity. This invention brought him a large fortune, but not all at once. He carried the first working model of his telephone to John A. Logan, offering him a half interest in it at \$25, but Logan made light of his machine, and rejected his offer. Then he offered a tenth interest in it to an examiner in the Patent Office for \$100, but this offer was also declined. Within fifteen years this tenth interest was worth a million dollars, so great a commercial success did the telephone become, when its claims were fairly set before the public. No one has done more than Bell to annihilate the barriers of space. Morse's work was wonderful enough in enabling us to receive tele-

DEAL DIRECT WITH THE FACTORY

Don't pay retail price for carriages or harness. Write for our catalogue and learn about our system of selling direct from factory to customer. Two profits are saved to you. Satisfaction is guaranteed, or you can return the purchase and we will pay freight charges both ways. We have the largest assortment of buggies, surreys, phaetons, carriages, and other high grade vehicles, as well as harness, horse rugs and other horse accessories, in America. Write for the catalogue to-day.

THE COLUMBUS CARRIAGE & HARNESS COMPANY,
Factory and General Office, COLUMBUS, O. } Write to
Western Office and Distributing House, ST. LOUIS, MO. } nearest office.



30 YEARS SELLING DIRECT

We are the largest manufacturers of vehicles and harness in the world selling to consumers exclusively.



No. 42—Double Surre Harness. Price \$19.50.
As good as sells for \$10 more.

Large Catalogue FREE—Send for it.
ELKHART CARRIAGE & HARNESS MFG. CO., Elkhart, Ind.

WE HAVE NO AGENTS but ship anywhere for examination, guaranteeing safe delivery. You are out nothing if not satisfied. We make 195 styles of vehicles and 65 styles of harness.

Visitors are always welcome at our factory.



No. 331—Surrey. Price \$68.
As good as sells for \$40 more.

A Perfect Weeder

in all soils, under all conditions. The all important feature of flexibility of teeth is near perfection in the YORK IMPROVED.

Made of square spring steel with round points, and set staggered in strong but flexible angle steel frame. Wide clearance, no clogging, teeth too strong to break. Multiplies producing qualities of soil and does not whip or bruise growing plant. Adjustable handles and shafts. Write for free descriptive circular.

Spangler Manufacturing Co., 501 Queen Street, York, Pa.



TWO CROP ESSENTIALS



are cultivation and keeping down weeds. More important than deep cultivation is keeping the surface stirred, breaking the crust due to rains, and allowing the light, air, moisture and warmth to penetrate quickly to the roots of the growing plant. For doing just these things the ideal implement is the

KEYSTONE Adjustable Weeder and Shallow Cultivator.

It kills the weeds at first showing, the top soil is pulverized and kept mellow, the plant roots are not disturbed and the moist soil is not brought up to dry in the sun. Adjustable in width. Narrows to 30 inches, widens to 7 1/2 feet. Strong, runs steady, no cumbersome shafts. Furnished either with round teeth or with flat to suit different soils, as we are licensed by the Hallock Weeder Company to use their famous flat teeth. Weeder booklet mailed free. We also make 10 styles Corn Planters, 12 styles Cultivators, 20 styles Corn Shelters, hand and power, Harrows, Field Rollers, Feed Cutters, etc. Write for catalogue C.

KEYSTONE FARM MACHINE CO., 1554 N. Beaver St., York, Pa.

Highest Typewriting Possibilities

Available Only to Users

..... OF THE.....

SMITH PREMIER TYPEWRITER



Known Everywhere. Employed by Governments and Great Corporations which command only the best facilities. Illustrated Catalogue and "Touch" Typewriting Instruction Book Free.....

THE SMITH PREMIER TYPEWRITER COMPANY

No. 519 Eleventh St., N. W., WASHINGTON, D. C.

graphic messages over the wires, but Bell's is far more marvellous, enabling us to hear the living voices of our loved ones with all their lesser peculiarities of accent and inflection. The Bell apparatus, however, was improved upon by a clerk named Emile Berliner, who evolved ideas which made the long distance telephone possible. The monopoly of the Bell Telephone Company is now held under Berliner's patents, and Emile Berliner has reaped prosperity from them.

Thos. Alva Edison was born at Milan, Ohio, February 11th, 1847, the same year in which Bell was born. He received all his early education from his mother, and at the age of twelve was a train boy on the railroad. A station-master taught him the art of telegraphy, in which he soon became remarkably skillful. He studied the principles of the science, and his quick and inventive mind soon turned towards making practical applications of electricity to the wants of every-day life.

When he made his first important invention, he carried it to a company on Broadway, N. Y., and the manager told him he would pay him \$36,000 for it, but not a cent more. This announcement amazed Edison, as he had not dreamed of aspiring to so large a sum, and when the check was paid him he still distrusted that it might be a bogus one, especially as the clerk refused to cash it off hand, but when Edison established his identity the money was paid to him without further difficulty.

It would be tedious to enumerate all of Edison's hundreds of inventions. Sufficient to say, he has attained not only fame, but great wealth by means of them. Amongst his marvellous inventions may be mentioned the phonograph, which is the root from which have sprung the graphophone, gramophone, and all the talking and singing machines which can so wonderfully reproduce the voices of the absent or even of the dead, the strains of concert singers, and of bands and orchestral music.

Augustus Schultz, of New York, invented the modern method of tanning, which has reduced the process of making leather from a year or two to a few weeks. All thin, tough leather now manufactured is made in this way. Prior to this invention, Schultz was very poor, but he became wealthy by means of it.

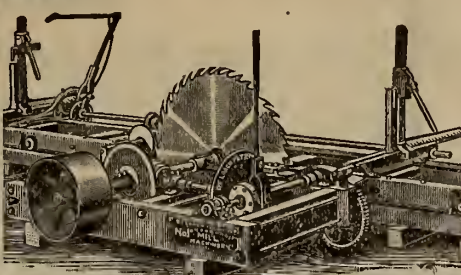
L. C. Crowell, who was a day laborer, made a large fortune by his invention of a paper folder which made possible the present enormous edition of many paged newspapers. The Crowell folder takes the sheets as they receive impressions, packs them into neat shape and stacks them up, ready for distribution.

Hugh Cook, of Dayton, Ohio, was a worker for wages when he made the invention on which the most efficient cash register in the market is based, from the proceeds of which he receives about \$25,000 a year.

Amongst the men who have reaped wealth from their inventions, I am glad to say I can enumerate Mr. John N. Gamewell, of South Carolina, who invented the fire and police alarm now generally used throughout the whole

The DeLOACH SAW MILLS ARE SURE WINNERS.

Eight sizes, from Farmers' 4 h p up to 200-h. p.
If Interested, write for large illustrated catalogue of DeLoach Patent Saw Mills to suit any power from 4 to 200-h. p.; Shingle Mills, Plauers, Edgers, Trimmers, Stave and Lath Mills, Bolters, Corn and Buhr Mills, Water Wheels, etc. To introduce our New Farmers' Saw Mill, fitted with DeLoach Patent Variable Friction Feed, we make this special offer:



We will deliver on cars at factory our No. 0 Pony Farmers' Saw Mill, with Duplex Dogs, Imp oved Head Blocks and Ratchet Set Works, complete as shown in cut, except it has Carriage made in two 4-foot sections, with Rope Drive instead of Rack and Pinion, without Saw or Belt, for \$115.00 Spot Cash!

With 36" Solid Saw, \$127.50; 40", \$132.50; 44", \$140.00; 48", \$150.00.
With 36" Inserted Saw, \$147.50; 40" \$152.50; 44", \$160.00; 48", \$170.00.

Best Rubber Belting, 4-ply, 6", 20 cents per foot; 8", 30 cents per foot, net.

No discount from these prices.

Our Warranty: This mill is warranted to be made in a workman-like manner, of first class material throughout, and to give perfect satisfaction if operated according to our printed instructions, which are so simple that a boy can understand them. Any one with ordinary intelligence can set and operate without the assistance of an experienced sawyer; will easily cut 2,000 to 2,500 feet of first class board lumber per day with only 4-h. p.; 3,000 ft. with 6-h. p.; 4,000 ft. with 8-h. p. is adapted to any kind or size power up to 15-h. p.

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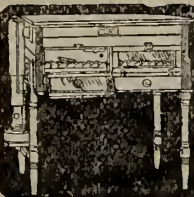
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SIX SOLID STERLING SILVER TEA SPOONS, \$3.40. Write for our catalogue, it contains many articles on which we can save you money.

C. LUMSDEN & SON, Established 1835, 731 E. Main St., Richmond, Va.

When corresponding with Advertisers, always mention The Southern Planter.

civilized world. Mr. Gamewell received a medal both from the French and Russian Government for this invention. He took up his residence in New York city, was made Superintendent of the Fire Department, and acquired a large fortune from his patents.

Another Southerner who has achieved prosperity by his inventions, is Mr. James Albert Bonsack, of Virginia, who invented the cigarette machine, which has redounded so largely to the wealth both of the State and of himself.

OF 217 MOST ILLITERATE COUNTIES IN THE UNITED STATES, 212 ARE IN THE SOUTH.

In the Southern States there are two hundred and twelve counties in which one-fifth or more of the native white males of voting age (twenty one years old and over) are illiterate; in all other States of the Union only five. In two States—North Carolina and Louisiana—nearly half the counties are in this class. In fifty-one of the Southern counties the illiteracy in this class is thirty per cent. or more. Of these, three are in Virginia, three in North Carolina, nine in Kentucky, eighteen in Louisiana and eighteen in Texas. In any of these counties the balance of power is in the hands of the illiterate voters, and illiteracy is king. Under such conditions Democratic government must be in great danger. Its form may remain, but its substance can hardly exist longer. If it does continue to exist, it can only be to illustrate the truth of the fact that it is woe unto any country when the ignorant man and the evil bear rule in it.

Prunes are exceedingly wholesome and should be used often as dessert. Many whose digestion forbids the eating of other fruit can eat stewed prunes and be benefited by them. Prunes have a curative property. They are very suitable for the diet of convalescents. They are nutritious, laxative, and healing to the membranes of the stomach. Do not take medicine, but eat liberally of stewed prunes. They have been known to cure inflammation of the stomach. There are several different varieties of as many different qualities, sour and sweet, but the large French prunes are the best that can be had.

Stewed prunes are the best for general use. Wash thoroughly and soak them an hour in cold water, then stew slowly in a porcelan-lined stewpan until soft. Sugar to taste before sending to the table, or they can be sweetened while stewing.

The heavy charges on small parcels come pretty near being outrageous. The robbery is all the worse where a package has to travel between two small towns and over the routes of two express companies. There should be a universal parcels post. This reform should precede any reduction of letter postage. Now that rural free delivery will soon be made universal, the next great reform to be insisted upon is the parcels post. Then, for a few cents, farmers can supply customers in the cities directly with nice fresh fruits, vegetables, etc., just as is done in England.

Uncle Sam says it's all right

Uncle Sam, in the person of ten of his government officials, is always in charge of every department of our distillery. During the entire process of distillation, after the whiskey is stored in barrels in our warehouses, during the seven years it remains there, from the very grain we buy to the whiskey you get, Uncle Sam is constantly on the watch. We dare not take a gallon of our own whiskey from our own warehouse unless he says it's all right. And when he does say so, that whiskey goes direct to you, with all its original strength, richness and flavor, carrying a UNITED STATES REGISTERED DISTILLER'S GUARANTEE of PURITY and AGE, and saving the dealers' enormous profits. That's why HAYNER WHISKEY is the best for medicinal purposes. That's why it is preferred for other uses. That's why we have over a quarter of a million satisfied customers. That's why YOU should try it. Your money back if you're not satisfied.

Direct from our distillery to YOU

Saves Dealers' Profits! Prevents Adulteration!

HAYNER WHISKEY

PURE SEVEN-YEAR-OLD RYE

4 FULL QUARTS \$3.20 EXPRESS PREPAID

We will send you FOUR FULL QUART BOTTLES of HAYNER'S SEVEN-YEAR-OLD RYE for \$3.20, and we will pay the express charges. Try it and if you don't find it all right and as good as you ever used or can buy from anybody else at any price, send it back at our expense, and your \$3.20 will be returned to you by next mail. Just think that offer over. How could it be fairer? If you are not perfectly satisfied, you are not out a cent. Better let us send you a trial order. If you don't want four quarts yourself, get a friend to join you. We ship in a plain sealed case, no marks to show what's inside.

Orders for Ariz., Cal., Col., Idaho, Mont., Nev., N. Mex., Ore., Utah, Wash. or Wyo. must be on the basis of 4 Quarts for \$4.00 by Express Prepaid or 20 Quarts for \$16.00 by Freight Prepaid.

Write our nearest office and do it NOW.

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Surplus and Profits, \$600,000.00

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FEED HER PROPERLY.

I mean buy your supplies right. You should lay aside a few Gold Pieces yourself, you might ask how it can be done—easy, dead easy—stop paying high, country prices. The mail comes to your home six times a week, I can get a letter from you every day.

GET MY PRICES, I WILL BE GLAD TO MAIL YOU OR YOUR FRIENDS MY PRICES EVERY NIGHT.

The railroads almost pass your house. Uncle Sam spends millions yearly to give you mail and railroad accomodations. You need not come to town, let Uncle Sam do your shopping. He can knock the spots out of you in buying—just try him. No matter how small your order I will be glad to have it and ship promptly. Here is what your groceries will cost you

JUST ONE-HALF WHAT YOU ARE NOW PAYING.

Arbuckle's Green Coffee.....	9½	Cotton-Seed Meal, Nothing Finer.		Gibson's Fine Old Rye Whiskey; fit for a king, get a quart.....	75
Granulated Sugar.....	4½	510 Tons Cotton-Seed Hulls—an excellent Winter Food, Cheap and Nutritious, per hundred.....	50	O'Grady's Pure Malt. Try a bottle of Malt for that hacking cough. It is a sure cure. It is good for dyspepsia. Indigestion it cures at sight. Warms the inner man; makes new rich blood, and stimulates the whole system. It has saved many and many a man and his family. 75 a quart. The price is insignificant compared to the benefit it will do you.	
Best Family Flour.....	4 25	This is as good as Coarse Meal for stock.		Country Cured Bacon Sides.....	13½
Byrd Island—have no other.		60,000 lbs. Rock Salt for Stock—try a bag, keep it in the Trough, improves Stock very much, \$1.00 for 100 lbs.		100,000 bushels finest Oats.....	40
10,000 lbs. Nice Family Pork.....	9	Chalmer's Gelatine, 3 for.....	25	60,000 bushels fine Corn.....	56
7 Boxes Axle Grease.....	25	Seedless Raisins in Packages.....	9	Water-ground Corn Meal, made of the finest White Corn, and ground by one of the finest mills in Virginia. Bushel.....	72
800 Bbls. White Oil.....	12	Cleaned Currants, per lb.....	8	I have everything that is required by a farmer from a 1,000 acre farm to a mouse trap. Write for my price list that will give you more information than a gossiping woman.	
1,000 Bushels Seed Rye.....	68	New Citron for Fruit Cake.....	12	Clover Seed, prime Crimson Clover Seed.....	2 90
500 Tons Fine Timothy Hay, hundred.....	75	Home Made Mince Meat.....	8	Choice Crimson New-Crop Clover Seed.....	4 25
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Washing Powders, 8 for.....	25	Home-Made Black Berry Brandy, 5 years old and nice.			
Fine Gun Powder Tea.....	40	Family Tonic, quart.....	20		
Ben Mocha and Java Coffee Roasted	18	Northampton Apple Brandy, 6 years old—pure—Apple Juice—nothing finer made—gallon.....	2 00		
Large Fat Mackerel in Nice Buckets or Kits, about 15 lbs.....	1 25	Clemmer's Fine Old Mountain Rye Whiskey, double distilled, sweet and wholesome, quart.....	40		
New River Herrings, 750 fish in the barrel, Large and Fat.....	5 50	Juniper Gin, sure cure for bladder and kidney troubles; relieves the cutting, stinging ache in your back, quart.....	45		
New Cut Herrings, barrel.....	5 50				
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Pure Lard.....	9½				
610 Tons Pure City Made Shipstuff, hundred.....	1 00				

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News-Leader, Richmond, Va.....	3 00	3 00
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The World (thrice-a-week), N. Y.....	1 00	1 25
WEEKLIES.		
Harper's Weekly	4 00	4 00
" Bazaar.....	1 00	1 40
Montgomery Advertiser.....	1 00	1 00
Nashville American.....	50	75
The Baltimore Sun.....	1 00	1 35
Breeder's Gazette	2 00	1 75
Hoard's Dairyman.....	1 00	1 35
Country Gentleman.....	1 50	1 75
Times-Dispatch, Richmond, Va.....	1 00	1 25
Religious Herald, Richmond, Va....	2 00	2 25
Central Presbyterian, " "	2 00	2 50
Christian Advocate, " "	1 50	1 75
Turf, Field and Farm.....	4 00	4 00
Spirit of the Times.....	4 00	4 00
Horseman.....	3 00	3 00
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The Century Magazine.....	4 00	4 25
St. Nicholas "	3 00	3 25
Lippincott's "	2 50	2 50
Harper's "	4 00	4 00
Forum "	3 00	3 25
Scribner's "	3 00	3 25
Frank Leslie's "	1 00	1 35
Cosmopolitan "	1 00	1 35
Everybody's "	1 00	1 35
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Strand "	1 25	1 65
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For COTTON When used on land with a fair amount of vegetation or with COMPOST (which is better) the crops are as good as from any Fertilizer. It prevents RUST and SHEDDING and keeps the plants green much longer in dry weather.

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General agents for **BLACK DEATH BUG KILLER** for destroying Potato Bugs, Tobacco Worms, and all insects injurious to vegetation; and Sifters and Insecticide distributors for applying it.

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The *BARBOUR BUGGY CO.*,
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REPAIRS for all the plows in general use.

CORN PLANTERS with and without Fertilizer Attachment.

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THE FINE HACKNEY STALLION

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Bay horse, foaled 1898; 16 hands high. This horse has great natural action, and is capable of getting the highest class harness horses.

FEE, \$10 00 the Season or \$15 00 to Insure.

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The Property of Mr. ROBERT TAIT.

Burlingame, 26235, record 2:18½, trotting bay horse, by Guy Wilkes, 2:15½, dam the famous brood mare Sable, by The Moor. This horse is richly bred, a prize winner, at the New York Horse Show, and sires grand looking colts. Fee, \$25 the season. Ed. Kearney, chestnut horse, by Tom Ochiltree, dam Medusa, by Sensation. A grand looking specimen of the thoroughbred, and will sire not only race horses, but hunters and jumpers of the highest class. Fee, \$10 the season.

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RACE RECORD, 2:17½, Pacing.

Timed separately in 2:08 in a race at Indiana State Fair, 1902.

Bay horse, foaled 1897; 16 hands high, weight, 1,200 lbs. Sired by Gambetta Wilkes, 2:19½, dam Magnolia, by Norfolk, 3670, Wealth is grand individually and in appearance.

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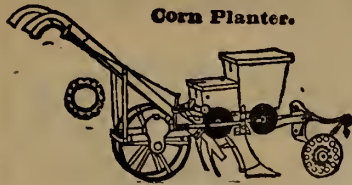
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Corn Planter.

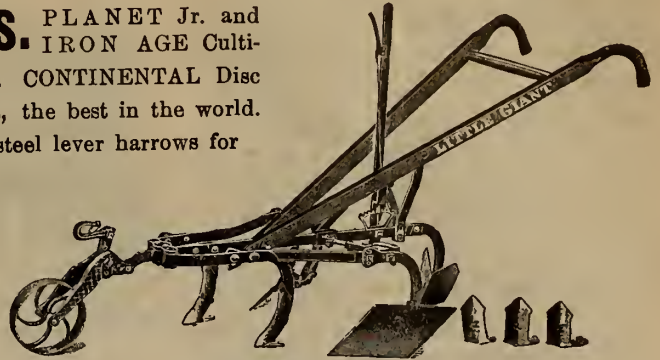
CORN PLANTERS.

The HOOSIER, both single and double row, with and without fertilizer attachment. The SPANGLER for Corn, Peas and Sorghum.

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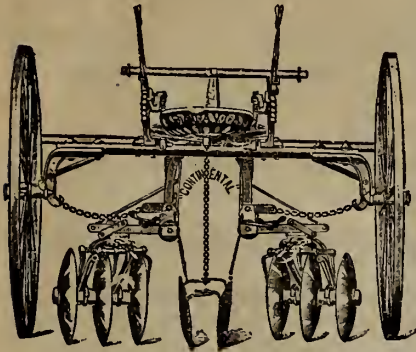
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Spring tooth attachments for Cultivator. RODERICK LEAN steel lever harrows for one, two and three three horses.



HORSE HOE.

Wood or Steel beam; all sizes. Guaranteed equal to any made.



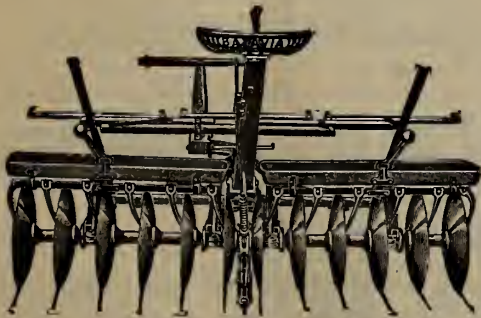
DISC CULTIVATOR.

THE SOUTH BEND CHILLED PLOWS.

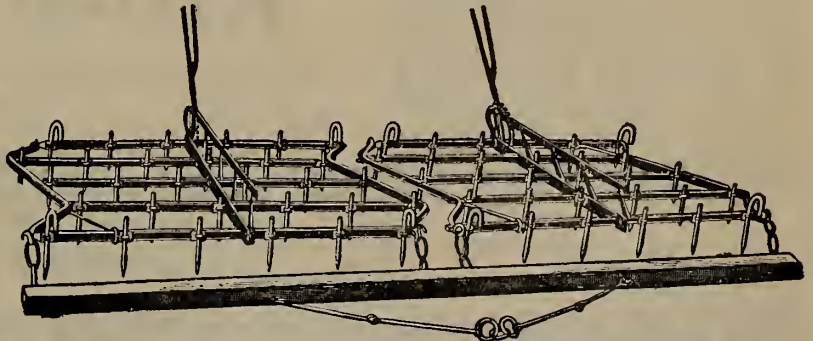
THE CELEBRATED

HANGCOCK DISC PLOW.

Single or Double Disc.



DISC HARROWS—All Sizes.



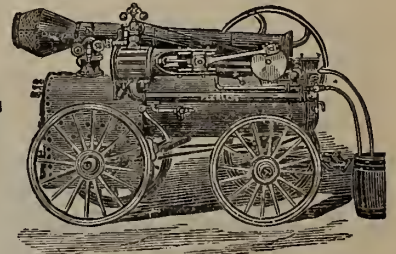
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PURE-BRED FOWLS.

Why is the pure-bred fowl better than the mongrel? The reasons are many. For one, you can always depend on the pure-bred for uniform growth. Take a mongrel hen, and her chickens will vary. They never grow fast, and one or two in the bunch will be ready for market two months before the others. Not only that; the pure-bred are uniform in looks after dressing, and sell higher on this account for breeding and hatching purposes. Their eggs and themselves always sell higher than the market price for either. Persons raising the pure-breds exclusively in this country must keep all their eggs from early spring until the hatching season is over to supply the demand for the eggs; and now, since incubators are so useful and common, those who want eggs often order many weeks ahead to get all they need. Another reason is that the mongrel hen averages at the best about forty eggs per year. The pure-bred laying breeds with worst care given will lay over a hundred eggs, and with moderate attention I have known them to lay very close to two hundred eggs per year.—Chas. Arnge Coy, Georgia.

A DELICIOUS NEW SALAD DRESSING.

A most delicious dressing for green salads is made by putting one tablespoonful of lime juice in a bowl, adding a teaspoonful of celery salt, a saltspoonful of white pepper, and a dash of cayenne. Mix in, a little at a time, alternately, three tablespoonfuls of oil and two of lime juice. Stir all the time, or the ingredients will separate. Add a tablespoonful of finely cut chives, or an equal amount of chervil or fresh tarragon leaves.

Nodd—I shall have to postpone that dinner for a week.

Todd—Certainly. Nothing wrong, I hope.

Nodd—Oh, no; but when I asked you, I was under the impression that it was the cook's night in.

Mother—Have you any waterproof boots for a boy?

Salesman—We have waterproof boots, ma'am; but they are not for boys.

Mother—Why don't you have some for boys?

Salesman—When somebody has invented a boot that has no opening for the foot to get into it, we may hope for boys' waterproof boots, not before.

"Pretty tiresome, isn't it?" remarked the first man at a reception.

"It is so," replied the other.

"I'd sneak out, if I could, but my wife would get mad. She's a friend of the hostess."

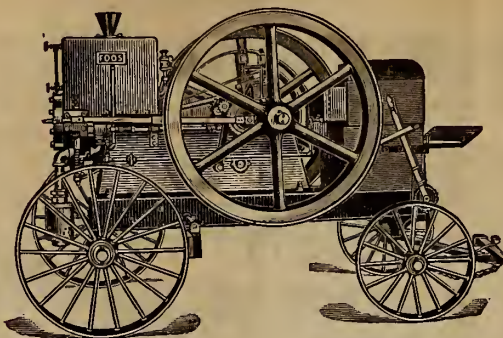
"I'd sneak out, too, but my wife would be furious. She's the hostess."

Mistress—Jane, I hear the bell. I think there must be somebody at the door.

Maid—I think likely, marm; but it don't be for me; my company always call at the kitchen door, you know.

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ALL SIZES AND STYLES.



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SOUTHERN PLANTER, - Richmond, Virginia.

THE SEX OF EGGS.

An English poultry keeper, who has been working on this subject for several years, thinks that he has at last discovered a way to insure a large proportion of either pullets or cockerels, as may be desired. He has given up all idea of being able to determine the sex by the shape of the egg, size of air-cell, time of day it was laid, or any external characteristics. He now thinks the sex of the egg is determined at the time of sexual contact, and that there are two elements or forces which unite, a positive from the male and a negative from the female.

Where the predominating force is positive, a male will result, and vice versa. To test this, he mated in April a very vigorous cockerel, with two hens which had laid all winter, with the object of getting cockerels. The hens had worked hard for some months, and the conclusion was that they must be more or less weakened by it. Thus was obtained a condition which pointed to a preponderance of the positive element, and the result was about 80 per cent. cockerels.

To further test this matter, six pullets, in the pink of condition, were put in a pen by themselves, and every afternoon a two-year-old cock, which all the rest of the day was running with 40 hens, was placed with them. This mating resulted in 80 per cent. of the chicks coming pullets. Similar matings have been practiced by American breeders for some years, and they have been able to obtain a large per cent. of pullets or of cockerels, but not always as high as 80 per cent., as here mentioned.

THE TRAP HAS BEEN SET, BUT THE FARMERS "ARE ON TO IT."

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THEY ARE GOING TO BUY THE WALTER A. WOOD MACHINES.



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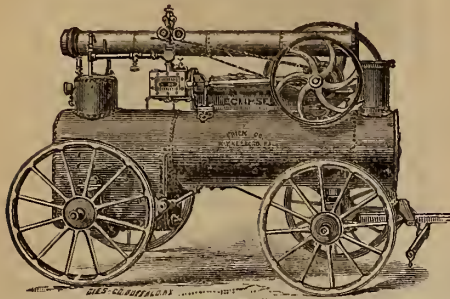
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Steel Lever Harrows.

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Harrows of all styles kept in stock at lowest net prices.



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Special prices given on Studebaker and Brown Wagons, Buggies and Carts. Studebaker Buggies, all styles, Studebaker Carriages, Studebaker Carts, Studebaker Runabouts.



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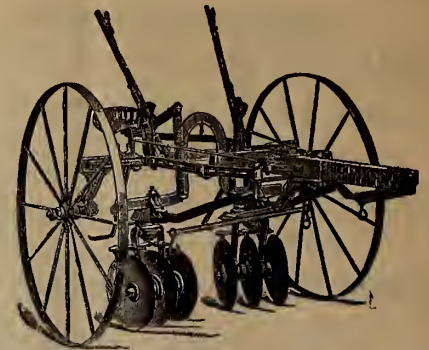
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58 styles and sizes. For horse or steam power. Write for prices and catalogues.



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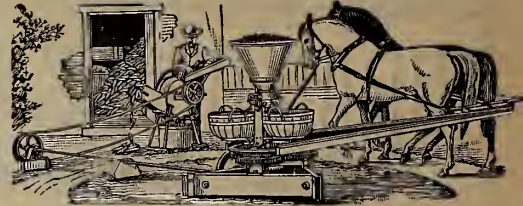
The frame is made of thoroughly dry hard wood. The joints mortised, tenoned and bolted. The bearings are bolted on to the frame instead of screwed. The iron work is made from the very best material, and ever piece is carefully inspected before being put on. This machine is high-grade all the way through. It is handsomely painted, striped and varnished.

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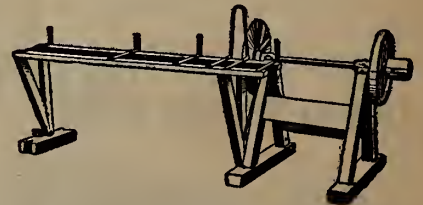
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The SCIENTIFIC Grinding Mills.
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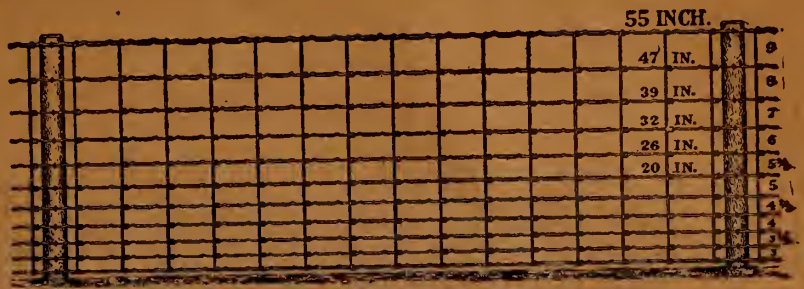


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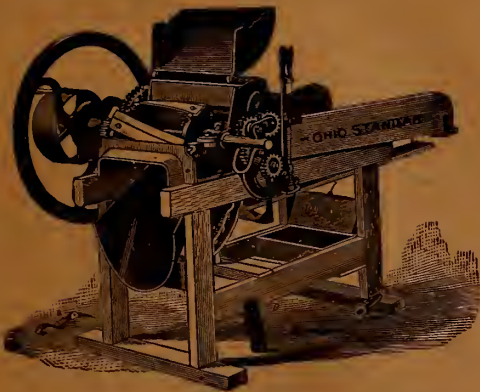
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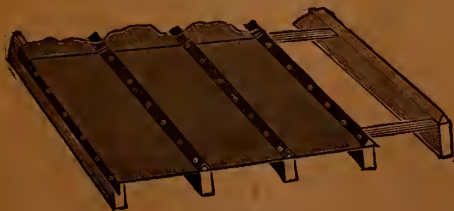
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Has no equal for grinding shelled grain, corn and cob into excellent feed. The Horse-Power is very useful for running other machinery as well. A full line of mills for horse and steam power.

THE No. 19 IDEAL MILL

For one horse. A very useful size for small farms. Price, \$15.00.

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