

TEXAS FARM AND RANCH

VOL. XIV.—No. 32.

DALLAS, TEXAS, AUGUST 10, 1895.

WEEKLY \$1 A YEAR.
5c. a Copy.

WIND-MILL IRRIGATION.

W. S. MARSHALL.

I have executed the commission you gave me and have visited and investigated some of the irrigated portions of Kansas and Colorado. I wish it had been possible to have an excursion of TEXAS FARM AND RANCH readers along with me. I am sure many of them would have come home determined to enter upon the work of improving their homes by providing for irrigation. The truth about irrigated countries sounds so much like boom stories that one almost despairs of making his readers realize what has been and is being accomplished. The work and its results must be seen to be fully realized. It was a revelation to me, even though I had read a good deal about what was being done by wind mill irrigation in the Arkansas Valley and Kansas. I had thought that the description was overdrawn a great deal but I found the half had not been told.

I left here June 15th via the G. C. & S. F. Ry. for

GARDEN CITY, KANSAS,

and arrived in the valley of the Arkansas at Hutchinson, Kansas, about 3 30 on the afternoon of the 16th. From that time until dark I was riding up the Arkansas Valley. At intervals all along the valley I saw what looked from the cars like small earth-work forts, but as they were invariably flanked by one or more wind mills I at once recognized them as wind mill irrigation plants which I had read of as being so successfully used here.

The morning of June 17th found me in Garden City, the garden spot of the Arkansas Valley—the garden spot not

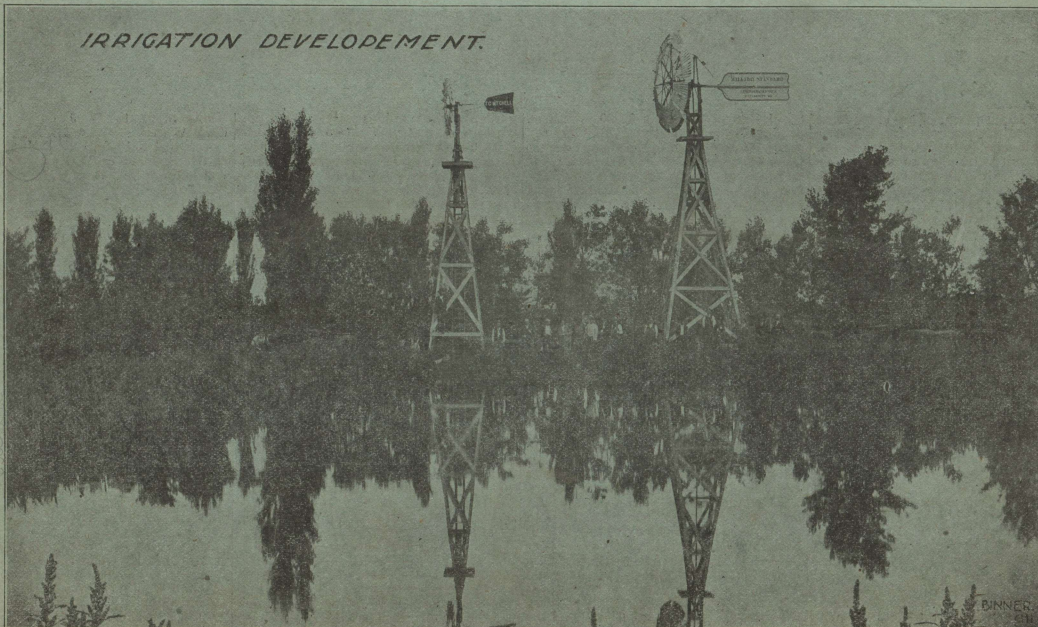


from its being so much more favorably located than any other places in the valley, but because its people, at an early period of its history, realized that the hope of that country was irrigation, that with it it would indeed become a garden of beauty, without it never a reliable agricultural country. To irrigate meant to stay; not irrigate meant to emigrate.

Through the courtesy of T. C. Mitchell, Messrs. Carter & Gauze, M. D. Frost, President of the Kansas State Board of Irrigation, Wm. Co'ton, and other citizens of the place, I was afforded every opportunity of inspecting the system of wind mill irrigation which is the chief method employed. Irrigation by the means of wind power has been the growth of necessity here. Several years ago companies were organized for the purpose of building irrigation canals, taking the water from the Arkansas river above Garden City and bringing the valley lands as far as Dodge City under the irrigation ditches. But, from one cause and another, the ditches proved, in a measure, unreliable and gave unsatisfactory service. The water was not furnished in winter, it came down too late. In the spring, was full of sediment when it did come, and, in fact, the ditch bid fair not to solve the irrigation question.

Under the whole valley there flows in the sand and gravel a constant supply of water. Tests showed that at from 7 to 25 feet below the surface water was obtained in almost inexhaustible quantities. To make this water available was the problem. This problem has been solved. The wind mill driven pump coupled with large storage reservoirs to-day is doing nine-tenths of the irri-

IRRIGATION DEVELOPEMENT.



Correspondence.

DOES IT PAY?

HOLLAND, TEXAS.

Editor Texas Farm and Ranch:

I bought one pair of thoroughbred Poland China pigs from G. E. King, of Taylor, Texas, on June 23d, 1893, paying him for the same \$25. On March 17th, 1894, sow brought five pigs; sold three for \$50; kept one sow that is worth \$80, and one barrow that will weigh 500 pounds. On August 29th, 1894, sow had six pigs; reared three, sold two for \$10 each, kept one sow pig that is now worth \$40. January 20th, sow had seven pigs; raised seven, sold four at \$10 each; have three on hand worth \$50. On July 9th sow had six pigs, worth now \$50. Now let us see what my investment has paid me. Sold seven head for \$90; have on hand twelve head worth \$220; total \$310 on one sow in less than two years. Boar pig will weigh 800 pounds, and would not take for him \$250. Now who can beat this on \$25 invested, in so short a time.

A. W. PARROTT.

THAT \$100 CHALLENGE.

BALLINGER, TEXAS.

Editor Texas Farm and Ranch:

In answer to the letter of Mr. Vandye Brown, of Granbury, Texas, in your issue of the 27th inst., regarding the \$100 challenge thrown out some time ago, regarding some fine pigs exhibited at Ballinger, will say that the matter has been referred to Mr. Newton J. Wardlaw, the author of the challenge, for attention, and doubtless same will be promptly attended to.

We hasten to assure Mr. Brown that Mr. Wardlaw is an honest and honorable gentleman, and authority when it comes to hogs, and doubtless when Mr. Wardlaw gets through with him and those fine pigs of his, he may not be so certain that the \$100 belongs to him, or that his pigs are the champions of the Lone Star State. However, we desire to say that the writer never for once even so much as intimated that he would in any way be responsible for, or attend to the "put-ups," as Mr. Brown seems to think but on the contrary, stated plainly that one of Mr. Pipkin's neighbors made the challenge; hence, as above stated, the matter has been referred to him for attention.

At this day and time we do not pose as authority on such matters, but it used to be that when accepting a challenge, the party making the challenge was corresponded with, and all matters of detail settled, and the wager put up. That at that time was considered but business, and it is just possible that the same construction would be placed on it today.

Now we believe that if Mr. Brown had gone at the matter in a business-like way, all arrangements could have been made, and it is just possible that matters can yet be satisfactorily arranged if a correspondence with Mr. Wardlaw is conducted on business principles, as the margin of weight of the pigs is altogether too slight for us to admit superiority.

Runnels county is strictly in the swim when it comes to raising fine hogs, and the day is not far distant when her presence in that, as well as in other important particulars will be felt, and even Mr. Brown may be induced to at least come out and take a prospectus of the country, and get acquainted with these people.

J. T. BILLUPS.

AN HONEST MAN.

I Wonder if He Is Living?

ATLANTA, Ga.

Editor Texas Farm and Ranch:

I was traveling in the West twenty-five years ago, and met in a Texas town a horse trader named McLeod. I examined his stock, and purchased a saddle mare, one that I believed would take me safely through the barren districts safely.

I was a young man and afraid of even the appearance of the broad sombrero and big whiskers of the six-foot athlete. After the trade was made I found to my dismay that the mare would buck, and I was delayed in order to get the animal sufficiently broke to attempt to ride it myself. In a few weeks, however, I was at home in the saddle on the lonely roads in the Lone Star State. But one day I rode up to a store in the country, dismounted and tied my horse to a limb. In a few minutes I returned to find my mare gone. I got a saddle horse

and followed for miles the deep tracks that I had learned to know so well. My attempt to capture, however, was futile, and when I got back I was in a broad, almost barren country afresh.

A habit I have to dot down the address of any stranger I have a business transaction with had not been formed at that time, and I had no one to appeal to concerning my loss, but several months later I was on a stage, between Shreveport and Vicksburg, coming east, when we met one going west. To my delight the handsome, broad shouldered McLeod halted at me, and as the drivers had a few minutes to talk, he came to the window in true Texas style. (I can see the smiling brown eyes, large white teeth, and broad smile yet), and the broad brown hand was extended, and calling my name wanted to know how I had got along with my bucking mare, etc. I then told of the loss, and he took my address, promising to look into the matter. In about three months I got a letter from Mr. McLeod, stating that he had located the mare on her old stamping ground; that she was in fine order, had a fine colt, and if I cared to sell he would refund what I had paid. I sold, and got by express just what I paid for her. I have often wished that I could shake that honest hand again.

A. J. WALKER.

DUTY.

MCKINNEY, TEXAS.

Editor Texas Farm and Ranch:

General Robert E. Lee said in a letter to his son: "Duty is the sublimest word in our language. You can do no more. You should never wish to do less." It is my intention in this article to present some of the reasons why our young fall in the performance of duty from a higher standpoint, and also those in the lower walks are found among the unfortunate ones. No microscope is necessary to discover the more glaring faults that tend to prevent success in our young people of both sexes dependent upon their own exertions for a living. There is a false notion prevalent, that an imperfect study of the line of business, especially in the mercantile line



will be rewarded in the same proportion as a thorough insight into all the details, forgetting to observe the old maxim of Ben Franklin that, "anything worth doing is worth doing well." When a party hires his or her time to another, expecting a fair remuneration for services, certainly he must be willing to accept pay just in proportion to service rendered. The day of soft jobs are things of the past. Competition is so great nowadays in every business that none but those who use their talents and energies efficiently are in demand. The clerk or applicant in a situation may depend too much upon the influence of his relatives, and too little upon his own exertions, which often terminates so badly that such persons are apt to attribute it solely to ill luck. In fact, in these times of depression, especially among the agricultural and laboring classes, there is but little chance for the thrifless and ease-loving to find employment sufficient to support one comfortably. The excesses of temperature, of wet and dry seasons, prevailing in different localities of our country, are lending their aggravating causes to the other depressing circumstances, existing in greatly lessening the opportunities of the poor and more dependent laboring classes. It is too late after a character is formed to change the faults that may have become deeply rooted in our nature. It is like the truth expressed in the sacred Scriptures, "the leopard cannot change his spots, or the Ethiopian his color." The boy or girl who shirks duty is apt to do so in every period of future existence, while the one who is always true to every duty as it occurs is sure to be better able to meet every obstacle that impedes his or her progress in gaining a livelihood. A man is sure to reap what he soweth. If he neglects to nourish the good seeds that a kind parent has endeavored to plant in the garden of his heart, noxious tares will grow up instead, and evil impulses will supplant the good.

Before closing I desire briefly to point out some of the obstacles, that hinder those who are generally called "helps" from succeeding in their occupation. It is true that a good servant, or the

term more mildly expressed, the good help, is worthy of his hire, and deserves more generous treatment. A lady from foreign lands, not long since, said: "America has many advantages in the way of making a living over the old country, but is sadly defective in the way of good help." There appears to be a prevailing sentiment among the lower classes to rather approve the plan to do inefficient work, and to demand wages on a par with the faithful assistant. It is to be hoped that a more enlightened and just feeling will arise among such classes, which will surely redound to their benefit, and to the greater comfort and satisfaction of their employers. Of course, it is the duty of said employers to properly reward faithfulness to duty on the part of every employee. Such encouragement may bring about a much needed change in every department of our labor system. No shirking of duty should be longer practiced by either party to the contract, but a faithful and firm purpose to do the right thing under all circumstances may do much to make a radical change along this line, which will be mutually beneficial.

OLD COTTON PLANTER.

THE NATIONAL CONVENTION OF AGRICULTURAL COLLEGES AND EXPERIMENT STATIONS, AT DENVER, COLORADO.

COLLEGE STATION, TEXAS.

Editor Texas Farm and Ranch:

In considering the great amount of work done at the recent convention of American Agricultural Colleges and Experiment Stations held in Denver, Colorado, during four days of last week, I thought that some of the work of this body might prove of interest to your readers. It was the ninth annual convention of its kind in the United States, in fact the organization is so young that many officials of A. M. Colleges do not know of the existence of this association, unless they happen to be presidents, instructors in agriculture, or workers in the Experiment Station. Throughout the state at large, I take it for granted that very little is known of the aims and purposes of this organization, therefore, a brief report of the last convention may be of value to the citizens of our state.

Every state in the Union had one or more colleges represented at the meeting, with the exception of the two Carolinas, Virginia and Idaho. The Texas College and Station were represented by Hon. W. B. Cavitt, of the Board of Control, and the undersigned. Each College and Station is entitled to a single vote. The total number present at the Denver meeting was 110. The greater number of these were specialists in chemistry, entomology, horticulture, mechanics, agriculture, or were Presidents of Colleges, or Directors of Stations. The meeting was called to order by Hon. Henry Alvord, of Washington, D. C., the President of the Association, and the reports of the chairmen of the several divisions were called for. These were presented by E. B. Vorhees, of New Jersey, chairman of the Division on Agriculture and Chemistry; S. M. Tracy, of Mississippi, chairman of the Division of Horticulture and Botany; James K. Patterson, of Kentucky, chairman of the Division of Mechanic Arts; J. H. Connell, of Texas, chairman of Division on College Work.

These reports give a general review of the work accomplished in the United States during the past year by the Colleges and Experiment Stations of the Association.

Papers and addresses from sections on agriculture and chemistry, entomology, horticulture and botany, mechanic arts and college work, were presented and discussed.

Our Agricultural Colleges and Experiment Stations have been organized in this Association only nine years, but in that time much has been accomplished in the steady improvement noted along all of the lines of industrial training in agriculture and mechanics. Not only is this true, but the various colleges and experiment stations have constantly raised their ideals, perfected their equipment and improved their method of instruction in Agriculture and Mechanic Arts.

Nearly all of the A. & M. Colleges now have both agriculture and mechanics taught in their courses of study but there is still a division among the colleges upon the question of how much time should be given to Agriculture and Mechanic Arts, to insure the best results to the College and to the State. On the one hand we find those institutions which

consider it their duty to teach Agriculture and Mechanic Arts, but not to the neglect of natural science, training in English language, or military science; on the other hand there are a number of colleges that make the teaching of Agriculture and Mechanic Arts incidental to the education of the students. Such courses consist almost entirely of language, mathematics, philosophy, ethics, or the natural sciences. Still some have interpreted the law to mean that the A. & M. Colleges were technological institutions. Some offer a commercial education, such as typewriting, book-keeping, etc., or have state normals attached, teach the art of printing and accommodate female students. It is needless to say that of the young men who attend the colleges in which agriculture and mechanics are taught only incidentally, usually fail to show a satisfactory percentage of graduates that enter these industrial lines. Without attempting to decide which of these interpretations of the federal law establishing the A. & M. Colleges is correct, allow me to state that our Texas institution does all within its power to give prominence to the teaching of Agriculture and Mechanic Arts, but does not omit some of the more liberal studies which are necessary in developing the boy into a useful citizen.

At the late meeting in Denver some interesting discussion arose on the subject of the student labor in the agricultural department of the colleges. For a number of years a few institutions, such as those of Michigan and Mississippi have laid great stress on the necessity for demonstrating agricultural studies by actual field work and these institutions have often been pointed to as models of excellence in this respect. Some of the other colleges have held that student labor was not practicable; that it was not popular with the students; that it did not have an instructive tendency; and have even gone so far as to say that the student was employed only at work with which he was perfectly familiar, and therefore, work from which he could learn nothing. This criticism is evidently not based upon the facts, in that it fails to note that the labor systems of Michigan and Mississippi are totally different from the ideas here stated. It also overlooks the fact that the very best results have been obtained in the use of such labor systems and that the graduates of these institutions endorse them most heartily.

The Experiment Stations of the different states were fully represented. A glance at the programme shows that many technical discussions had a place and proved of benefit to those present. The matters discussed were usually those of methods in use; what lines of experiments were most beneficial to the people of the different states; how best to publish the results or get the facts before the public, etc.

The work done by the Farmers Institutes in the various states was fully endorsed and it was urged that the colleges should be more generally represented at the fairs, than in the past. It was the earnest wish of all present that the Colleges and Stations should be brought nearer to the people and that the people should be made more familiar with their work. This would increase the usefulness of both these public institutions.

The general officers chosen for the ensuing year were: President, S. W. Johnson, of Connecticut; Vice-Presidents: Cyrus Northrup, of Minnesota; J. H. Connell, of Texas; S. W. Robinson, of Ohio; E. A. Bryan, of Washington, and R. H. Jesse, Mo.; Secretary, J. H. Washburn, R. I.; Executive Committee: H. H. Gosdell, Mass.; Alston Ellis, Colo.; H. C. White, Ga.; E. B. Vorhees, N. J.; H. E. Alvord, Washington, and S. W. Johnson, Conn.

The future of these Colleges and Stations largely depends upon the board of trustees in each state. Of course the college officials who do the teaching and the station officers who conduct experiments and investigations must be competent men, but unless the board is in sympathy with the objects of the College, are progressive in their views, and understand something of the system of education, it will be impossible for the College to do its best work. Of late years our Texas institutions have been peculiarly favored in their boards chosen by the different governors to preside over the destinies of our College and Station work at this place. But the institutions of some other states have not been so fortunate.

All of the sessions of the Association were held with open doors, and quite a

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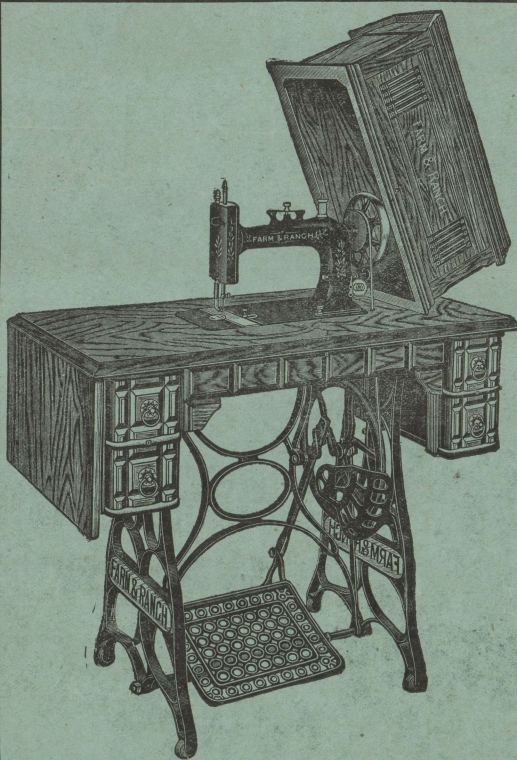
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"Texas Farm and Ranch," - - Dallas, Texas.

Orchard and Garden

Edited by Dr. A. M. Ragland, Pilot Point, Denton Co., Texas, to whom all communications for this Department should be addressed.

It is a matter of regret that as fortune, or misfortune, arranged matters, Texas FARM AND RANCH was not represented at the Horticultural meeting at Bowie, last week. It was expected that Dr. Ragland would be there, and he was furnished transportation for that purpose. His note below, however, explains why he did not go. If he had notified this office of that approaching calamity (?) a special representative, or several if necessary, would have been dispatched and this would not have been thus. The fact that this paper was not represented at Bowie was our misfortune, not our fault.—ED.

PILOT POINT, TEXAS.

Editor Texas Farm and Ranch:

I am short this week. I expected to go to Bowie and write up things, but the "powers that be" ordered otherwise. Yesterday morning a young horticulturist of ten pounds weight called at our house, and we concluded to keep the young man, so you see I could not go to Bowie. Yours truly,

A. M. RAGLAND.

NOTES AND COMMENTS.

The State Horticultural Society but recently adjourned, will be in the thoughts of our readers, hence, a review of its history and work will not be out of place.

In the fall of 1886, if our memory serves us right, members of the North Texas and Pilot Point Horticultural Societies met at the invitation of the Central Texas Horticultural Society in the city of Dallas, and organized the Texas State Horticultural Society. The first regular annual meeting was held the next year at the city of Tyler, receiving a royal welcome from the East Texas Horticultural Society, which has its seat in that famous old town. The launching of this, created only a ripple in the current of public affairs for several years, but it has been steadily growing in influence, and is now becoming one of the potent factors in the development of the fruit growing industry of Texas. Then no place was shipping fruits, berries, etc., in car loads. Now, in quite a number of places the greater part goes in refrigerated cars, at a low rate of freight, instead of being shipped by express at enormously high charges, and it is only a question of a very short time when many other towns will send the products of surrounding orchards to market in car lots. The present year is demonstrating the absolute impossibility of sending fruit to market, and competing with other points who ship by fast freight. But we are digressing.

The present outlook for rapid advancement of the horticultural interests of our State, under the fostering care of our Society, is flattering. The Society, for the good of farmers and villagers, has undertaken the preparation of a catalogue of all fruits successfully grown in Texas. The names of varieties which have proven of marked merit will find a place in it. Many old sorts originated North and East will be discarded as unsuited to our climate and soil. New varieties of Southern or home origin will find special favor in this catalogue. A goodly number of varieties, which, after thorough testing, will thus be added from year to year. The value of such a catalogue to any one without experience will be hard to estimate. Many immigrants are reaching Texas every year; they are in many instances buying from Northern nurseries varieties which did well in their old homes, but will be doomed to failure planted under such different climatic conditions.

Of course this catalogue as published by the Society will have only a limited circulation. The State could, by publishing this with the live discussions had at our annual meetings, and circulating them gratuitously, do a real service to her people. The publication of a bulky biennial volume of statistics by the State Agricultural Department that is of no value to anybody, should be discontinued, and bulletins containing such valuable material as we have just referred to, sent out instead. The Horticultural Societies, and other like agencies, will continue to hammer away at this question till practical results follow.

One of the leading features of the Bowie meeting was the great local interest taken in it by the citizens of Bowie. Two halls of ample dimensions were

provided, one for the really great exhibit of fruits, vegetables and flowers; the other for the meeting of the Society. This was a distinct departure, and conducted much to good order, and minimized the noise that has in past years interfered more or less with the practical work of the Society. Both halls were beautifully draped and decorated—the deft fingers of many ladies contributing to this excellent feature. To say that the meetings were well attended is quite unnecessary, for when people take hold of things as the people of Bowie did, it follows that they will be on hand to see and to hear, and to take part in the work.

Many splendid exhibits were found upon the tables prepared to receive them. Among the largest and most attractive we mention the splendid display of grapes by President Munson, consisting of many old varieties well known, and also a large number of his new creations, which are likely to revolutionize grape growing in the Southwest.

Mr. Jno. S. Kerr, of Sherman, had a most excellent show of fruits of all kinds. His apple exhibit was especially fine, consisting of a large number of varieties. He also exhibited plums, pears, peaches, and other products of the orchard and vineyard.

Some of the fruit growers about Bowie, in Montague county, made a splendid exhibit of apples, taking the highest premium awarded. Prof. Joseph L. Cline, read an instructive paper on the relation of our Texas climate to the cultivation of the olive. The paper is rather long, but we will probably find space for it in an early issue of Texas FARM AND RANCH.

Prof. F. W. Mally, of Hulen, Texas, read the report of the special commission authorized by the State Horticultural Society, upon diseases of roots of orchard trees and nursery stock. This paper is one of the most valuable before the Society—practical and to the point. It appears in another column.

I am mailing you with this mail a small box. Enclosed you will find a small Shuck Strawberry tomato. The one in the paper is the wild, or one that grows here in any fence corner, and is called some kind of a nightshade and considered poison. You will notice the stem, or rather the stalk of the wild is smaller. I send only the flower of the cultivated as the wild is exactly the same. The seeds of the cultivated were bought of Hastings; I ordered from catalogue and planted in a box and set out like any other plants, and I think that is the cause of it being so much larger, as it has been well cultivated. If you know anything in regard to them, whether poison or not, I will be thankful for information on the subject.—Mrs. L. P. LANDRUM, Timon P. O., Louisiana.

Some enterprising seedsmen are continually laying for suckers—and it does seem that they always get bites. The shuck tomato is a humbug and a fraud.—ED. O. & G.]

FIRST REPORT.

The Commission of the State Horticultural Society Upon Diseases of Roots, of Orchard and Nursery Stock.

Following is the first report of the special commission of the State Horticultural Society upon root diseases of orchard trees and nursery stock, which F. W. Mally, M. Sc., chairman of the Special Commission, read before the State Horticultural Society, at Bowie, July 31:

The root diseases, viz., root rot, root gall and root tumor, as first discussed in a paper upon these diseases by the chairman, and which was read before the Society at Houston, July, 1894, form the theme for this review. At that time the above diseases were discussed with respect to their nomenclature, symptoms, character and histology in a manner detailed enough to warrant omitting their consideration in the present report. Anyone desiring to get the details relative to this phase of the discussion can obtain them by applying to the editor of TEXAS FARM AND RANCH at Dallas for the issues during July and August, 1894, which contain the discussion in full.

In this report any such features will be added or such matter repeated as relates directly to the practical utility of ways and means for remedies and protection against losses. In this connection I feel constrained to again direct attention to the infectious nature of the root rot fungus

of fruit trees. It was demonstrated last year that this disease was identical with the root rot disease of cotton, and that the same fungus—*oosmium auricolum*—produced it in either case. By infection in this case is meant the distribution of soil in which diseased plants or trees were grown, or pieces of diseased roots, to soil not yet infested, but in which the fungus will develop and produce another diseased spot, tree or plant.

"Despite this published information, planters and fruit growers in some instances have persisted in a second planting of the diseased spots with plants and trees. As was to be expected, they complained of loss from this kind of farming or fruit growing. My reply always was that their loss should have been bankruptcy rather than a temporary embarrassment. It seems absurd that any one should venture in the light of established truths to trust to luck in escaping the development of such potent diseases, and I have absolutely no sympathy with those who experience loss in this way. Ignorance is no excuse since the facts are well established and have been widely published.

However, great reforms cannot be effected with one stroke, and for this reason and to give greater publicity to the important truths already published, it seems advisable to again include a list of the plants susceptible to attack by the root rot disease.

HOST PLANTS.

Among the fiber and vegetable plants are found cotton, sweet potato, alfalfa and dolichos sinensis.

Of the fruit and forest trees the following should be listed: Elm, basswood, white ash, pear trees, apple trees, Russian mulberry, china tree, native persimmons, silver maple and paper mulberry.

Among weeds, we have the following: Sida, ragweeds, cocklebur.

Of the forest and ornamental trees China and paper mulberry suffer most.

The following list of plants is probably susceptible and have died of some root rot when planted in infested land, but have never been examined microscopically to determine positively. The list is compiled from fifty-seven answers to a circular sent out to various localities by the Texas Experiment Station, asking the parties addressed to state what plants were susceptible to and died from the *oosmium auricolum* disease. The following is the list: Watermelons, tobacco, cow peas, sweet peas, Irish potatoes, okra, black ash, pecan, bolts d'arc, black locust, walnut, roses and cherry.

The genus *prunus*, which includes plums and peaches, has thus far been found to be exempt from the disease.

For the reason already given of including a list of host plants it is well to again discuss the treatment of this disease.

TREATMENT.

This naturally divides itself into two sections: The precautionary, or that of keeping uninfested fields and orchards free from disease, and second, cultivating the disease out of the soil when once infected. As to measures of precaution, it is evident that the utmost care should be exercised in placing orders for orchard trees and that the nursery from which the stock is obtained should be absolutely free from the disease. Particles of earth from such nurseries and diseased pieces of roots are readily transported to new fields, where they propagate and spread.

Uninfested districts should therefore, guard against the introduction and cultivation of susceptible plants in the line of vegetables and agricultural products, and they will remain free from the disease so long as clean cultivation of the susceptible weeds already mentioned is kept up.

If a field is infected and it is desired to plant that acreage with susceptible varieties of fruit trees, the whole should first be given clean cultivation, clear of all susceptible weeds, vegetable, agricultural or tree stock, for at least two years. The non-susceptible agricultural products which should be recommended or such cultivation depends somewhat on locality. Corn, sorghum, millet, wheat, oats and other members of the grass family are not susceptible and will thrive in most of the infected areas. Corn one year, should be followed with small grain the second and then the orchard. Usually the disease is confined to reasonably well defined areas, which may indicate the center of infection. These small areas should be cultivated as directed for still a third year before planting the trees. The

same cultivation of non-susceptible crops, or simply clean cultivation, should be maintained for a like number of years after the orchard has been planted.

As bearing further on the curing of land infested with the *oosmium* fungus the following is quoted from the chemist's report in the sixth annual report, Texas Agricultural Experiment Station: "Another neighbor had a small piece of land in which the cotton all died before maturing any bolls. He planted it to sorghum two years in succession, and the next year it produced a fine crop of cotton, none of it dying."

Further on in the same report another correspondent says: "I have experimented with salt in drills three years, and have had good results. First tried it on a piece of ground where all the cotton had died the year before; lost with salt ten per cent; the second year about 5 per cent; the third year about 2 per cent." Another reports: "Had one acre of land on which the cotton all died. In December of that year sowed salt broadcast about like a big morning frost and then turned the land over. The next year only about 5 per cent of the cotton died. Sowed in salt the following fall, and the succeeding year lost no cotton at all from root rot." Upon these data the chemist summarizes on page 407 of the same report as follows: "It is doubtful if fertilizers in general give any real benefit, except, perhaps, to induce a stronger and more vigorous plant, better able to resist disease, at the same time making it mature earlier, or shortening the time of growth. Fungicides or antiseptics harmless to plant life are likely to give better results than ordinary fertilizers. Common salt may prove beneficial in this direction, but of course the continued application of the common salt to the soil must be attended with the utmost care, as it is itself in time sure to injure the soil if it accumulates in any great quantity. While this is written especially for the case of cotton, still it shows what can be of service as a check to the disease germs themselves, and by a judicious selection and adaptation the orchardist will find these statements almost equally serviceable."

Beyond question the safest and only certain procedure is to plant the infested land in such orchard stock as is non-susceptible, and of which we have examples in the plum and peach. The resisting qualities of these two fruits in repelling the attacks of this disease have already been mentioned.

The reasons submitted for again calling attention to the host plants and treatment of root rot apply equally to that of root galls produced by the little nematode worm—*heterodera radicleola*. The following, then is a list of the host plants as tabulated by Prof. Atkinson in his studies upon this parasite:

HOST PLANTS.

Peach, fig, grape, potato, tomato, egg plant, physalis, abutilon cotton, okra, sida, mallow, coffee weed, cow pea, Japan clover, bird's foot clover, melilotus, ipomea, cleome, physalis, sun flower, watermelon, nutmeg melon, citron, beet, spineless careless weed, worm seed, corn, cabbage, turnip, rutabaga, horseradish, parsnip, lettuce and salify. On this list of thirty-six host plants the following are easily susceptible and are most infested, if there is opportunity for choice: Potato, tomato, abutilon sp., cow pea, bird's foot clover, sunflower, watermelon, "nutmeg melon," citron, cabbage, rutabaga, parsnip, salify and cotton—thirteen of the thirty-six—quite a long list of choice food plants for the parasite, many of which are only too frequently cultivated between orchard rows. This is a most vicious practice in infested localities.

Dr. Neal in his bulletin No. 30, adds the following host plants to those given by Prof. Atkinson:

"Uncultivated plants which are but slightly attacked: 'Shepherd's purse, blackberry, dewberry, cypress vine. The following are infested upon occasion: Purslane, sand purslane, verbesina, wormwood, Jerusalem oak, cleome weed." Of the cultivated plants Dr. Neal adds the following: Pepper, spinach, cassava, radish, pea, peanut, kale, squashes and cucumbers. Among the ornamentals he includes two species of the hibiscus, several ice plants, parlor ivy, morning glory, petunia, gourd, begonia, coelestis, dahlias, Iberis, koniga, achyranthes, noiana, buddleia, and bougainvillea, together with several species of apricot, two of the flowering almond and cape jasmine. Among other shrubs and fruit trees he

Farm and Stock.

If the summers were a little longer in Kansas the farmers would be spared the trouble of gathering their corn, for it would all be blown away by cyclones.

Joe Patchen has "cleaned up the shooting match," by defeating Robert J. in four heats, averaging a fraction less than 2:05 to each heat—one being timed at 2:04.4.

The slaughter of horses for food is already beginning to tell on the consumption of meat. Confidence in one's bank and in one's butcher, are founded on the same general principles, and the introduction of horse and mule meat will add largely to the ranks of vegetarians.

Purslain, or pursley, is a pest; but if taken up and carried to the pigs, they will pester it more than it pesters the farmer. Pigs will quit any sort of green food for pursley, and they know what is good for them. There are many other weeds that can be similarly utilized, especially those of the genus *amaranthus*, of which careless weeds are an example.

There is nothing better calculated to impress upon one the importance of early rising as running a dairy. The most important work in this branch of agriculture begins about one hour before daybreak, and continues until early bed time. This facilitates the habits that contribute to health and longevity. A lazy dozer should never keep a dairy.

The best hay is made by putting in windrow or cocks as soon as wilted and dry. Cut late in the afternoon; it may be put up as soon as the dew dries off next morning. This hay will smell like a Chinese tea store, and it is more attractive and nutritious than that which has bleached or browned in the sun for several hours. It can be cut in the morning and windrowed two hours later if the weather is steadily warm and dry and it will be all the better for the quick transition from standing grass to hay ready for the rack.

General Burrey says the Texas Mustang and the thoroughbred breeder true to type than any other breeds. Probably there is not a finer bred mustang now in Texas. It is a mistake that horse breeders and writers make in confounding the common broncho, which is a mixture of a score of breeds, including the Mustang, with the wild horses of the Texas prairies, descended from the early Spanish importations, when there were no other breeds here to contaminate their blood. The broncho is a very different horse from the true mustang.

The Secretary of the New Hampshire Board of agriculture states that the law of that state requiring imitation butter to be colored pink is a complete success. The people will not use it, but demand butter instead. There has been but little difficulty in executing the law, except in the lumber districts. The experiment is held to demonstrate the fact that people do not eat imitation butter from choice; but they see before them what seems to be butter and give their stomachs the benefit of what ever doubt may hang over the subject.

THE CROPS.

Since the cessation of the heavy and continued rains of May and June, crop prospects have improved. Corn and forage crops are in good condition, and remarkable for luxuriance and abundance. Root crops are promising, and are becoming a prominent feature of every well managed farm. Grass is immense, and cattle are glad, and that sort of gladness makes them fat, and being fat they are money in the purse. Melons and fruits are ripening in wasteful abundance. This season emphasizes the fact that farmers must provide a means of utilizing surplus fruit and melons. In years of abundance like this only the best should be offered for sale. Every day there are rolling into Dallas wagon loads of bulk peaches, good and bad, ripe and green, all sorts and sizes in a heterogeneous mass, good enough for hogs, but the purchaser very naturally offers only the ruling price of the worst. Many of these loads of sixteen to eighteen bushels sell for a price that six to ten bushels of the best, carefully selected and neatly crated, would readily bring. The inferior fruit can be fed to hogs with profit, or canned, or converted into vinegar, and mixed and wholesome beverages. Our people have not learned how to market their crops yet;

but this knowledge will come with experience.

The cotton crop is convalescent. On account of rains and weeds and grass, many entire fields have been abandoned. It is believed that the total shortage, compared with last year, will reach 24 per cent, and that the next government crop report will confirm this estimate. The crop is also late. Cotton buyers may therefore prepare to pay a little more per pound for this than the last crop, unless they can doctor reports, or combine to bear prices until the crop is out of the producers' hands. After this they can carry on their monkey business and play with prices to suit their own whims.

TEXAS AGRICULTURAL EXPERIMENT STATION.

[Questions Answered by J. H. CONNELL, Director.]

I have been thinking of trying to establish a herd of thoroughbred Shorthorn cattle on the lower Trinity or Brazos rivers. Can it be done? Will they live with good treatment, or will they die of Texas fever? What treatment and remedy for the trouble? Please give me all the reliable information you may have in regard to this subject. Some tell me good cattle will die in two years after reaching that part of the state. I do not want to take them if they die.—J. W. H., Bowling Green, Missouri.

ANSWER.—I beg leave to say there is no question of successfully establishing a herd of pure bred Shorthorn cattle or other breeds in the Trinity or Brazos bottoms, so far as acclimation fever is concerned, since there are many good herds of Shorthorn cattle in the state, from which good breeding stock may be obtained that are already acclimated. You would find some difficulty, however, in sending down pure bred Shorthorns from Missouri. But I think acclimation fever may be avoided largely by following the latest instruction upon this point. I take pleasure in sending you a Bulletin under another cover, published by this Station upon that subject, which, I hope, will give you the information desired upon this point. We import from North and East, Holsteins and Jerseys to this place without serious loss from acclimation fever.

I would like to know the best methods of applying cotton seed meal, whether before planting or to the growing crop. Shall I put some Jerusalem corn this year, in accordance with your suggestions.—W. N., Galinas, Texas.

ANS.—Replying to your inquiry of March 24th, which has just been received in to-day's mail, I take pleasure in saying that cotton seed meal should not be applied in contact with any seed that may be planted. It has a tendency to destroy some of the seeds that it touches. Apply it as early as possible to the crops, not later than two weeks after the corn is up. I take pleasure in placing your name upon our mailing list, and send you the Bulletins of our last year's feeding and field experiments, numbers 33 and 34.

Can you tell me how barnyard manure compares with commercial fertilizer for a one year use of land? And what commercial fertilizer would you recommend for a general vegetable garden including corn, melons, etc.—J. S. O. B., Dallas, Texas.

ANS.—Concerning your inquiry as to the use of manures for garden purposes, I must say that much depends upon the nature of the soil. If it be tight, hard or close in its texture, barnyard manure will always prove a great benefit. It will improve its mechanical condition, render it more open, more easily cultivated, and allow tender, young roots to penetrate it to considerable depth. In any kind of truck gardening work it is a good general rule to use some commercial fertilizers in combination with barnyard manure in order that you may derive the greatest benefit from the use of barnyard manure. It contains an excess of nitrogen over and above the needs of ordinary crops, and is deficient in potash and phosphoric acid. If your land is of the same character as that on the south side of the Trinity, which I see largely devoted to garden purposes (a light yellowish, or red sand), it will respond freely to the use of "rankage," which may be supplied by the packery in Dallas or Fort Worth. This contains large amounts of nitrogen and phosphoric acid. In all garden work it is a safe rule to apply ashes to the soil as manure. This can be best obtained from

wood-burning factories in your neighborhood. Manures are applied from two standpoints: first, deficiency in the soil; second, the need of the crop. Sandy soils are usually deficient in nitrogen and phosphoric acid. Clay soils are deficient in nitrogen and potash. River bottom soils (alluvial) are deficient in potash. A corn crop demands a large supply of nitrogen and phosphoric acid. Melons, tomatoes, and all vines require large amounts of the same material. Cotton requires potash and phosphoric acid, and a limited amount of nitrogen. Small grain appreciates nitrogen and phosphoric acid in abundance.

Will you kindly give me the relative value of bat manure as compared with other kinds; also about its value per ton (in dollars) at or near the point of utilization? My reason for asking is, that we have a cave a little distance from here, estimated to contain 100 car loads or more.—B. W., Gatesville, Tex.

ANS.—I beg leave to say that the value of bat manure varies considerably with the age of deposit, and whether or not it has been fired any time and reduced to ash. I send you under another cover an estimate of the percentage composition of bat manures, such as is sold from the mines of John Marbach, of Bracken, Comal county, in this state, made by our chemist Prof. P. S. Tilson. It ordinarily sells in this state at something like \$14 on board of cars at points of shipment. You will probably be able to get Mr. Marbach's prices by writing him a letter asking for quotations, at the above post-office.

Can you tell me what is being done in your state in the cultivation of canna? Can you send me a few seeds for experimental growing in this climate.—W. A. T., Lincoln, Nebraska.

ANS.—I beg leave to say that there are 400 acres in cultivation near us, without irrigation, and the acreage in the state is increasing annually. The plants are not produced from seeds, as a rule, but from tubers somewhat resembling sweet potatoes, the same root which contains the tannic acid, for which the crop is grown. We have none of these on hand at present, but I take pleasure in referring you to the Toyah Vale Irrigation Company, Toyah, Tex., who can furnish you with any amount desired. These should be planted early in the fall for the best results.

Can we send some of our soil there and have it analyzed and find out what the soil lacks to make certain crops of vegetables to perfection? If we can, let us know the cost of it and how to proceed, how much to send, etc.—O. L. B., Brighton, Texas.

ANS.—I beg leave to suggest that a chemical analysis of your soil will not give all of the information you wish concerning it. If some essential plant food is absolutely lacking in your land, a chemical analysis will indicate it, but should some plant food be present in an unavailable form it might or might not indicate it. If you care to send samples to the laboratory for analysis you may do so, but I believe you will save time and trouble if you will make application of some simple fertilizing elements to your land. Try ashes on one piece of land, bones or bone meal upon another, and cotton seed meal upon a third, stable manure upon a fourth. The ashes contain potash principally, the bones contain phosphoric acid in abundance, and cotton seed meal contains nitrogen, especially. Should your land respond to any one or two of these applications freely it will indicate the lack of that particular element in your soil. Measure lands carefully and yields carefully. The cost of analysis of a soil amounts to \$1. I hand you a letter to our chemist, and he will write you.

If you have issued or have on hand from the Louisiana Experiment Station a paper relative to rice culture, will you kindly forward me a copy of same? I am desirous of obtaining some practical facts upon this subject, and will be glad to have you furnish me with that information—from preparing the ground and caring for the crop through its growth until ready for the threshing, in fact, the best methods to be pursued in order to obtain the best results; also, where the rice for sowing is to be obtained, time of maturity, yield per acre, time for planting, and the difference between low land and upland rice.—O. S. V., Galveston, Texas.

I beg leave to say that we have on hand no surplus Bulletins from the Louisiana Experiment Station touching

on the cultivation of rice, but I take pleasure in referring to you the honorable Commissioner of Agriculture, A. V. Carter, of Baton Rouge, who will send you Bulletins upon request. With our location of the main Station here, it is impossible for us to conduct rice experiments that would be of general interest to the rice growing section of our state. For this purpose a special sub-station is needed, such as has already been established in other sections. A bill providing for this was placed before our last Legislature, but they refused to appropriate necessary money to support this work, much to our regret, and to the neglect of the rice interest in the state. The matter has passed over for two years.

Please give me what information you have relating to percentage of the albuminoids, carbo-hydrates, etc., in different feeding material.—W. A. E. & Co., Fort Worth, Texas.

I beg leave to say that I send you certain publications touching upon practical feedings experiments conducted at this Station, but think you will not find in them the exact information concerning the digestible food constituents desired. If you would be more specific and ask for analysis of certain materials, I would be pleased to supply you with this without delay.

QUERIES AND ANSWERS.

American Dairyman.

The following queries and answers embody in condensed form the teaching of the dairy schools of the country on bacteria, and the observing of the philosophy they set forth by dairymen will be aidful to them in producing better products.

Why should the udder, etc., of the cow and the hands of the milker be made as clean as possible before milking?

To keep bacteria from getting into the milk.

Why should milk be removed from the stable as soon as possible after milking?

To prevent absorption of any odors of the stable.

Why should milk not be put at once after milking into closely covered cans? Because by so doing odors are retained in the milk.

Why should milk that is to be set for cream in covered cans or put in cans for immediate delivery be aerated?

To remove animal and other odors from the milk.

Why should milk be set as soon as possible after milking?

To stop the action of bacteria.

Why should the temperature of milk be reduced as quickly as possible for creaming?

To prevent formation of fibrine and the growth of bacteria.

Why should milk that is to be set for cream be agitated no more than is necessary before setting?

Because agitation favors the formation of fibrine.

Why should milk pails, pans, cans, churn and every utensil used the dairy be kept most carefully clean?

Solely to keep out bacteria.

Why is cream ripened before churning?

To develop flavor and render churning easier.

Why should the ripening process of cream not be allowed to continue too long?

To prevent the development of bacteria that produce offensive products, such as bitterness, and destroy aroma.

Why should a thermometer be used at every step in the process of making butter?

To be sure that the temperature is the one desired in each stage or division of the work.

Why does cooling milk prevent or retard souring?

Retards growth of bacteria.

Why do milk and cream sour less readily in the winter than in the summer?

There are fewer bacteria in the air and the temperature is lower.

Why does the ripening of cream make it churn more easily?

The lactic acid matter of cream is thus rendered less tenacious.

Why does milk become sour?

Bacteria changes sugar into lactic acid.

Why should the room in which milk is set be made perfect in its sanitary conditions, such as good ventilation, cleanliness of floors, walls, etc., freedom from bad odors without, etc?

To keep out undesirable bacteria, and



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Texas Jersey Cattle Club—J. D. RUDD, President, Waskom; J. O. TERRELL, Secretary, Terrell.

State Farmers Institutes—R. F. BUTLER, Organizer, Waxahachie.

ESTIMATES of the cotton crop vary according to the ignorance of the estimator.

If mules and men ever exchange places will it not be tough on the street car drivers?

We have not expressed our opinion of the coming woman. If she is any better than those who are already here we will take—as many as the law allows.

The South exports about 14,000,000 gallons of cotton seed oil, and imports nearly 1,000,000 gallons of the same oil annually, having been manipulated and labeled "pure olive oil."

JUDGE Beatty, of California, in a recent decision, holds that "playing poker for money is not gambling." The probability is that the learned judge also holds—a winning hand himself occasionally.

THE A. & M. College will place an exhibit at the Dallas Fair this fall. Application has already been made for space. The exhibit will be one of great interest to farmers, as well as the general public.

HETEROPEHY is a disease, the symptoms of which consist in using words that do not convey the intended meaning. Newspaper reporters and politicians are especially liable to this disease. We know some who have it bad.

THE human mind is like a field. The soil may be ever so rich, yet without cultivation it will bring noxious weeds in profusion, but no valuable crops unless carefully planted and cultivated. Or the soil may be poor, so that undisturbed, it will bring no crops, good or bad. But this barren soil may be enriched and planted with good seed and carefully cultivated until it becomes a

thing of beauty. Thus intellect, without proper training becomes the devil's machine shop, and the mediocre mind may be taught to bring forth only good fruit.

THE premium list for the seventh annual Jack County Fair has been sent out. Their premiums are liberal, and every preparation has been made to have a grand time the first four days of October, at Jacksboro.

FARM hands are reported scarce in the Northwest, and employment agencies, which are almost as numerous as saloons in every town and city, have but few applications for this class of labor. Tramps, however, are abundant, importunate and unruly.

THE recent murders of missionaries in China will result in an increased demand for men and women willing to sacrifice themselves to save the souls of a few heathens, and for money to carry the gospel to them and teach them its truths. And yet, judging from past results, there will be little need for a Chinese exclusion act in heaven.

HENRY CLEWS, speaking for the Wall Street bankers, says: "The crops of this country each year are the measure of our prosperity as much as gold is the true measure of values." Speaking of the increased activity of the New York stock exchange, the same authority says: "It is largely due to the changed value of money, not only in this country, but all over the world." That is the way it is generally understood.

A NEWS PAPER correspondent writing from Mexico, says that, "Mexicans always use oxen of one color in the morning and a different color in the evening, without any reason, except that their forefathers did so." When we consider that but few Mexicans have more than one ox, and that they seldom use him, we can more fully appreciate the enterprise of the reporter.

In all ages and every land, the best men have been farmers: Noah, Abraham, righteous Lot, Jacob, Esau, Gideon, Saul, David and Elisha, were farmers and stockraisers; Cato, Lucullus, Cincinnatus and Varro, plowed oxen, naked from the waist up. Washington, Jefferson, Jackson, Coke, Reagan and Ross were and are farmers. These, with the hosts of others, as good and great, have tilled the soil and fed the cattle, and were proud of their vocation. And we are proud of them.

THE London Times has been investigating the condition of crops in Great Britain, and the result is rather a bad showing. Hops is the only crop showing a better condition than last year. The conditions below last year are as follows: Wheat, 25.5; barley, 19.9; oats, 29; beans, 23.9; peas, 23.3; potatoes, 6.8; roots, 31.1; grass, 42.45. British farming, owing to low prices, has been increasingly unsatisfactory for several years, and will be worse this year. British finance is crowding British agriculture to the wall.

HENRY CLEWS' last circular intimates a fear that the syndicate of Wall Street and London financiers, under whose protection the U. S. Treasury is at present operating, will withdraw that protection, and that another raid will be made on the national funds. It is humiliating, at least to one who is not a capitalist, to realize that this great country, the richest in the world, should be deliberately placed at the mercy of a lot of Shylocks who only refrain from taking the pound of flesh for fear of destroying a profitable victim.

SOMETHING WRONG.

The great want of the masses in a Republican country, where the people rule, is a general diffusion of knowledge—education that not only reaches the masses, but teaches the things they should know—education, not only of the mental, but of the moral faculties. Education that merely enables man to know and command the occult forces of nature that deals only with the intellect, is one-sided, and simply develops a monstrosity. Like the cephalic freaks seen at the circus, the head is exaggerated at the expense of other parts equally necessary in the formation of a symmetrical being. This kind of education has produced the most accomplished villains the world ever saw, from Dr. Beauregard to Dr. Holmes. Any system of education that does not embrace the grand trinity of human attributes, the mental, moral, and physical, or that neglects either, is a fraud on the race and merits neither patronage nor respect.

Recently we have had important convocations of learned teachers, held for the ostensible purpose of mutual improvement in the art of teaching, and the programmes have embraced learned lectures on many branches of that art, and we have looked hopefully for some practical dissertation on training the moral nature of man in his duty to his fellow man, but were disappointed. We believe an honest man, who cannot read in his mother tongue, is worthy of greater admiration than the most learned scoundrel that ever poisoned a wife or betrayed a constituency. God never created anything superior to an honest man, and those who are engaged in training the youth of the country to lives of integrity, and industry, which is its twin brother, are doing a work God-like in its character and its results. The current record of crime shows unmistakably that there is something wrong in our system of education.

We do not mean the work of our schools and colleges only, but every influence that tends to develop character. As in a rich soil cockleburrs and careless weeds, as well as the corn, are stimulated to a luxurious growth, so does a purely intellectual training develop the seeds of depravity, which are inherent in man, along with the better growths. This is a case which we do not profess to be able to diagnose correctly, nor to prescribe for with confidence, but we do claim that the disease deserves the serious consideration of the physicians in charge.

GIVE US A SQUARE DEAL.

It is true, as we have said before, that farmers live on a higher plain than they ever did before. But it is also true that every other class does the same. The question is, does agriculture enjoy in just proportion to her services to the country and humanity. Ours is the richest land on earth, and has the richest men, and some of the meanest, as well as some of the best. But it is a fact that the very rich men are not the ones who have made the country rich. They have produced no wealth, and yet they possess most of it. Farmers produce more wealth than all other classes combined, and ought, at least to enjoy as much of it as any other class. If the wealth they produce enables others to live in splendor, they, at least ought to live in comfort. But those who neither toil nor spin tell us that farmers ought to be content because they live better than their ancestors, and let commercial and financial sharpers have all the rest. Our farmers are better off now than farmers ever were in any country, or any age, and yet they are systematically robbed by combinations operating under the forms

of laws which they have been able to procure, of more than half their earnings. Under just laws and honest commercial customs, agriculture should become what God intended it should be, the greatest, most honorable most lucrative and independent calling known among men.

THE German carp and the English sparrow, which were introduced into this country a few years ago, at great expense, and with so much promise, are now declared to be curses in disguise. The sparrows drive away useful birds, and the carp are charged with destroying better fish native to our waters. In some states combined action is being taken against the German fish.

NOTWITHSTANDING the uncertainty of litigation, people go to law now more readily and for less cause than ever before. Perhaps this very uncertainty appeals irresistibly to the gambling instinct of humanity, and causes men, otherwise well poised, to risk their substance on the hazard of the courts. Litigation is distinctively an American fad, there being as much of it in one large county in this country as in all England.

THE Texas State Fair and Dallas Exposition has become a fixed state institution that the people look forward to and expect each year to be an improvement over all the past combined. Heretofore they have not been disappointed. But they will be surprised at the one now under way. Few people have an idea of the extent of improvement, both in facilities and exhibits now being provided for them. It will be the greatest of the series.

MR. JACOB VOELKLE, of Collinsville, Texas, sent the manager of TEXAS FARM AND RANCH a ham and a piece of bacon, for the curing of which goods he has earned considerable local fame. The sample upon a fair test proved good enough to tempt an orthodox Jew to forswear the Mosaic creed. Mr. Voelke will probably offer some of his hog products for sale in Dallas soon. This simply shows that Texas farmers can make as good bacon as any, if they only know how.

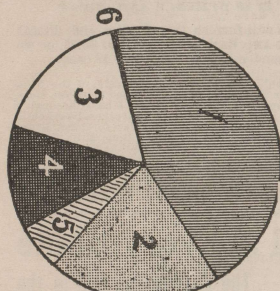
THERE is a war in Illinois, up in Spring Valley, between the negroes and Italians. At this distance from the scene of carnage we know but little of the merits of the case, but the negroes are natives of this country and speak our language—the great vehicle of patriotic thought; the Italians know little, and care less for our institutions, and conspire in deteriorated Latin to substitute the reign of the Mafia for law and order. Therefore our sympathy is with the colored man and brother.

WE are informed by an article in the New Orleans Picayune that the cultivation of sugar in the section of Mexico between Monterey and Tampico is in a state of rapid development. Refineries are springing up at all the prominent points on the railroad connecting the above points. These refineries are using the best improved appliances. The cane grows there to an enormous size, whole fields presenting a solid mass of green fifteen feet high, the canes often being two and a-half to three and a-half inches in diameter. There seems to be no lack of a desire on the part of capitalists to invest in the business. This is the long famous pilloncillo region. The pilloncillo is a small truncated cone of solid sugar, made by simply boiling the juice sufficiently to consolidate. It contains both the crystallizable sugar and the molasses, and is popular all over Mexico, with people of all nationalities. In fact, it is delicious.

LAND DEVOTED TO FRUIT CULTURE IN THE UNITED STATES.

Green's Fruit Grower.

While there is so much said about the extent of fruit culture in this country, my opinion is that the reader will be surprised to learn how small is the proportion of American soil devoted to this industry. In order to give a faint idea,



I have drawn a map which is given above, in which I have attempted to mark the area of land in the United States devoted to fruit culture as well as to the leading staples, waste land, etc. I have not attempted to be exact, knowing that it was practically impossible to arrive at any absolute data on the subject.

In constructing this map I find it difficult to mark a strip sufficiently small to indicate the territory devoted to fruit culture. The strip shown on the map as that devoted to fruits is too large, but it is the nearest approach that the artist could construct.

Our readers will be surprised at the extent of waste land - as shown in space marked No. 1 on the map, and yet there is no doubt that as large a proportion of the United States is covered by forests, mountains, deserts, swamps, rocky and other lands which come under the head of waste lands, although forests are not properly such.

Number 2 is devoted to the various spring crops, such as oats, barley, flax, buckwheat, and other crops than those named on the map.

Number 3 is intended to indicate the proportion of land devoted to wheat culture. While wheat is considered our leading staple, corn very closely rivals it, if indeed, the corn crop should not prove to be quite as valuable as the wheat crop.

Number 4 is intended to represent the amount of land in this country devoted to corn growing. One reason why corn does not figure so extensively in our statisticians' reports, is that so large a quantity is consumed on the farm.

Number 5 represents the amount of land in the United States devoted to growing cotton. I suspect that possibly too much territory is allotted to this staple.

The smallest division of all, that dark space, which is but little larger than the lines separating the various staples from the others, is intended to represent the amount of land in the United States devoted to fruit culture. This shows at a glance that fruit culture in this country is in its infancy, for surely a land famous the world over for its success in every line of fruit culture, both North and South, East and West, the amount of land occupied by that industry is insignificant. It will need no prophet to foretell that in the years to come a much larger area in this country is to be devoted to fruit. But, you ask, what are we to do with it? My reply is, that in the first place our population is increasing largely, and this will be one avenue for consumption; in the second place, our people will be led to consume much larger quantities as prices get within their reach; in the third place we will adopt methods of canning and preserving not now known or not now practiced, by which our fruits can be consumed in every country of the world. At present the United States is supplied with dried fruits such as raisins, figs, currants, prunes, largely from other countries. We are also importing largely lemons, oranges, pineapples, bananas and other tropical fruits.

If the map illustrates the small measure of attention which fruit growing is receiving at the present time in this country, as compared with what it might, or what it will, the object of the writer will have been attained.

FROM FRIEND COOPER.

The Farm and Ranch Sewing machine I ordered from you came through all O. K., and is a dandy. It is as good, and I believe superior to the machines that we pay agents 50 dollars for. We have worn out two other good machines, and my wife likes the Farm and Ranch better than she did either of the others. I consider your machine only cost me \$19, for I cannot afford to do without TEXAS FARM AND RANCH, and do not see how any progressive farmer can.—W. J. COOPER, Holland, Texas.



Lort, but dem wetter prophets can lie!

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Texas State Fair

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DALLAS EXPOSITION.

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Lower Railroad Rates than ever before secured. For Catalogues, Premium Lists, Programmes, etc. and further information, address

O. A. COOR, J. T. TREZEVANT,
Secretary, President.
DALLAS, TEXAS.

A CELEBRATED PUMPING ENGINE

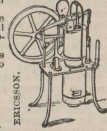
The famous Ericsson invented the celebrated Hot Air Pumping Engine, bearing his name, many years ago. It has been modified and improved until it is now the most perfect piece of machinery that is produced for the purpose intended. Every stage of development has had in view the lessening of cost, economy in use, safety, simplicity and the necessity for as little labor as possible.

Its usefulness on the farm is being demonstrated constantly to those who are seeking improved methods of handling their land and crops to the best advantage. The De Lamater-Ericsson Hot Air Pumping Engines insure a steady, constant supply of water for every use that it is required. They are being used extensively where irrigation is required. On the ordinary farm they supply an abundance of water for all household uses, for the barn, dairy, lawn and stock. They are perfectly safe, exceed, in every simple and require absolutely no labor or care. A very small quantity of fuel will run one for hours.

They are largely taking the place of wind mills, and will probably supplant them altogether in the near future.

An illustrated catalogue will be sent free to all who ask it. Address,

DE LAMATER IRON WORKS,
467 West Broadway,
New York, N. Y.



The Wonderful Witch.

Place her on your hand then watch her

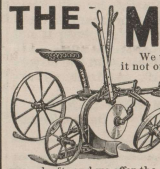
She twists, turns, stands, falls, and thus

TELLS YOUR FORTUNE

The Witch of you and of Endor for you any amount of fun. Just the thing to convince a crowd with laughter. Every movement has a meaning, and if you place her on your sweetheart's hand and watch her turnings and twistings, and refer to the printed directions they will tell you whether she thinks him or her passionate or amiable, constant or changeable, jealous, cold, diligent, energetic, fearless, etc. They will also tell what she thinks of you.

Send in silver or stamps and receive two witches (\$ for 25c.); also learn how to make a few dollars easily.

Randolph Novelty Adv. Company
Union City, Indiana, U. S. A.



THE MIDWAY SULKY PLOW

We unhesitatingly recommend the Midway as being without an equal, and offer it not only as a competitor of the many cheap sulks, but guarantee it to be the equal of any sulky plow ever put on the market, regardless of price. The mould-board used is the same as used on our Canton Clipper Blackland Plows, which have gained such an enviable reputation in the blackland districts. The beam is attached to frame so that it runs perfectly steady in all kinds of land, with no tendency to oscillate up and down, thereby leaving the furrows of uneven depths. This is a serious defect in other plows that is thoroughly overcome in the Midway, and will be found a great advantage to all who desire smooth, steady plowing. The rear or third wheel is set so that in combination with the two other wheels the bottom friction is all taken off, thereby securing minimum draft, and we offer the Midway as the lightest, strongest and most complete Sulky Plow ever put on the market, and at a price that is within the reach of everybody. Hundreds of testimonials from the best Texas farmers. Circular free. We manufacture Jack Harrow, Sulky and Gang Plows, Steam Plows, Harrows—both Wood and Steel, Canton Clipper Walking Plows, Riding and Walking Plows, Corn and Cotton Plows, Cheviote Corn Planters, and Sulky Cutters. We carry the largest stock of Buggies, Carriages, Road Carts, Delivery Wagons, Mail Hacks, Sorghum Mills, Evaporators, Grain Drills, Tractor Engines, Threshers, Hay Presses, Drag Rakes and All-Steel Rakes. Bait and Old Wagons. Write us for your terms.

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Many New and Valuable Features.
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SOUTHWESTERN BRANCH
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WOVEN WIRE FENCE

Why pay 60 to 90c. a rod for fence when you can make the best Woven Wire Fence on earth, horse high, bull strong, pig and chicken tight, for

13 to 20c. A ROD?

A man and boy can make from 40 to 60 Rods a day. Over different styles Catalogue Free. Address—**KITSELMAN BROS.,** Ellettsville, Indiana.

Machinery That Goes

and keeps going—because its construction is as simple as it's effective. That kind and no other are our products.

Engines, Boilers, Machinery and Supplies,

cotton gin outfits, steam cotton presses, steam pumps and injectors, wrought iron pipe and fittings, rubber and leather belting, electric generators and motors, ventilating fans and electric supplies of every description.

HUNTER & BOOSO,
172 Elm St., Dallas, Tex.

Fifty-two issues of TEXAS FARM AND RANCH for one dollar.

Poultry.

It is the noisy flock that does the work. When hens are cackling and roosters are crowing, wait till the hubbub subsides and then go and gather the eggs.

The Cocker's Journal announces the failure of a recent effort to organize a state game breeders' association. The writer tried that experiment once and it was like pulling a heavy load up a steep hill. Couldn't make it work.

At night when everything is still, go to the chicken house and listen carefully to the breathing of the fowls, and if there is any cold or roup you will detect it. If you hear a wheeze, strike match, locate the delinquent and remove it for subsequent treatment.

To keep hens in the best condition for laying they should not be kept filled up with food. They should be so fed that they will spend their time searching for more. Abundance of exercise and plenty of good sound feed are the factors that multiplied together make eggs.

A flock of hens well cared for will supply the home table with delicacies, and pay the tax collector and the church dues, buy thread and needles, pins and buttons and there will be a surplus for other purposes. But a flock of hens neglected will supply the family with a few eggs in early spring, and then they take a rest.

How is this? We have received No. 5 of the second volume of the Cocker's Journal, published at Belton, Texas, for July 1895. Have twenty-nine issues of this paper been thrust upon a waiting world without our knowledge? Never heard of it before. It is a neat publication and well filled, but what has it been doing all these two years? Savage Bros. are publishers.

Snuff mixed with the dust bath for fowls will keep away vermin. Every farmer should raise a few stalks of tobacco—not for chewing or smoking, but for use among live stock and fowls. It is death to screw worms, scab, scap, all external parasites, and nothing is surer death to chicken lice than the powdered leaves. Take the leaves and thoroughly dry in the sun; then break and rub between the hands; sift and rub the coarse parts again and again. Fine snuff can be made by sifting through fine muslin.

A DOUBLE-BARRELED EGG.

Perhaps I could interest your many readers with an egg story. A few days since, Capt. J. S. Dowell, of this city, presented to the writer an unusually large Brahma hen egg which weighed four ounces and twenty grains. When my wife broke the shell preparatory to cooking she discovered a well developed egg on the inside of the outer shell. The space between the two shells was filled with the white part of the egg. This may be a common freak of nature, but is the first within the observation of the writer.—F. C. THOMPSON, McKinney, Texas.

[This is not an uncommon occurrence.]

LUNG WORMS.

I wish to ask a question: I killed a chicken, to all appearances very healthy, but on cutting it open found its lungs very large, of an ashy color, and literally filled with little red corrugated worms. After the lungs were taken from the chicken they shrank till they were not more than half as large as when taken out. The chicken was very fat, and showed no other signs of disease. Please tell what was the matter, and a remedy, and very greatly oblige a reader of your excellent paper.—J. W. BOASE, Dallas, Texas.

[This is a parasite whose life history we have not studied, but it is supposed to come from infected drinking water, and to find its way into the lungs by way of the trachea.]

CROP BOUND.

Please let me know what is the matter with my hen's crop? It's getting larger from day to day until it gets to be of such an unnatural size that it seems to be very uncomfortable to them. The hens seem to be perfectly healthy otherwise. In examining the crop it contained mostly sand and egg shells. We feed them mostly on wheat and now and then a little oats, sorghum seeds, etc., be-

sides all the vegetables they want; they have also plenty of gravel. What may be the cause, and is there any remedy? Success to TEXAS FARM AND RANCH.—A SUBSCRIBER, Alvin, Texas.

[It is a morbid appetite from some unknown or obscure cause. A change of place or a change of diet is the only preventive we know. Individuals may be relieved by giving flaxseed tea and working the crop until the contents move, or, when fully impacted by cutting into the crop and removing the contents. After this feed soft feed for a few days. Pick the feathers off a place the size of a half dollar; draw the skin a little to one side and cut into the crop, remove contents, and the skin will cover the wound, which will heal in 48 hours.]

EXPERIENCE WITH SUMMER CHICKENS.

H. B. GERR.

We have fifty summer batched chickens, and several hens sitting. The oldest of our summer chickens are six weeks old; they were hatched the first of June, and some of the young roosters are now crowing. The next lot, hatched the latter part of June, are growing fast and feathering nicely. One brood tacked off on the 4th of July, nine in number, are all with us yet, and in a thrifty condition. Several broods hatched since the 4th are doing well. In fact, out of the fifty, we have as yet lost but one chicken, and it was killed by getting in with the wrong hen. She knew it was not hers and so she pecked the poor little fellow to death.

Our summer broods are all quartered in sheds with latticed fronts. The chickens can get out between the slats, and run about in the grass, but the hens are confined to the sheds, which are nearly six feet square.

We feed our little summer chickens chiefly on boiled potatoes and corn bread mixed up together. Sometimes we use the raw meal instead of bread. When we can get any parched egg shells we crumble them up with the feed. In addition, we also feed out sprouts out in short lengths. The chicks are very fond of the latter, and will leave everything else, excepting meat for the "greens." We give them a little meat twice a week.

We have less work and worry with our summer and autumn chickens than we do with those of the early spring-time, because the weather is warmer and more settled.

Every Saturday night we take our hens and go the rounds with the kerosene can and a large soft rag, and rub every hen with chickens lightly, and pretty much all over with the rag saturated with the kerosene oil. In this way we keep the chickens rid of lice, and the attendant disease—gapes, for we firmly believe that the chicken that has no lice will have no gapes. Nashville, Tenn.

WOMEN AS POULTRY RAISERS.

Mrs. Will Johnson has been on a visit to the poultry yards of Mrs. C. A. Buck, and is prompted to write the following to the Nation's Stockman: When I was admiring her flocks of thoroughbred poultry, I could not help comparing them with the poultry kept by farmers generally, and the question why every farmer's wife should not aim to raise just as fine poultry as Mrs. Buck does, came to my mind very forcibly. Of course it is not to be expected of them to undertake to keep as many breeds as she has, but they can keep one breed distinct and pure. The trouble and expense of raising thoroughbred poultry is no greater than that of raising the common mixed breeds, and the results are so much more satisfactory.

Many farmers make the serious mistake of keeping cockerels of their own raising year after year, until the vitality of the flock is reduced so low that the young chickens are extremely difficult to raise. I have my serious doubts as to the profitability of such a flock. It does not improve matters to exchange eggs and cockerels with neighbors whose flocks have been inbred also, nor would I advise any one to invest in high priced birds to mate with such a flock, although in some respects it might be an improvement; yet the obtained results would fall far short of what the farmer's poultry should be.

Farmers themselves should devote more of their time and attention to the care and management of the poultry, and a strict account be kept of the income and expenses. Generally speaking, the farmer's wife knows that there is money in poultry even under adverse circumstances, but she needs the co-op-

eration of her husband to make a success of it. There are so many things connected with the poultry business which a woman can't very well do.

The best and therefore the cheapest way to replace the common mixed flock with a thoroughbred one is to secure a breeding pen of the preferred breed, then keep it separated entirely from the other poultry. The expense of procuring poultry stock and of preparing a suitable place to keep it is so distasteful to farmers that they are very slow to undertake it. They would not think of treating their other farm stock as they do their poultry, but it is high time that they were turning their attention to something more remunerative than well, most anything raised on the farm now except poultry.

When a farmer has made a wise selection of the breed that it will pay him best to keep, let him stick to it, select every year a number of his best hens and purchase a pure bred cockerel to mate with them. Although there is some expense to begin with, it pays immensely in the long run.

Young turkeys are considered by every one to be very difficult to get started to grow. My experience is confined to Bronze turkeys exclusively, but my flock has never been inbred, and it is a common saying on our farm that we can't kill one of the little turkeys without stepping on it. Of course this is not strictly true, but they are certainly very hard and strong even while quite small.

At the time of the long cold, rainy spell last June I had about seventy young turkeys hatched out. They had been given to the turkey hens to raise and were never cooped once, and yet I did not lose a single turkey. The cold and wet did not seem to affect them at all. I fed them regularly and disturbed them just as little as possible. One's success with poultry depends largely upon the kind of stock he keeps.

RIGHT HEAT FOR INCUBATORS.

Coleman's Rural World.

The right heat for an incubator is 104 degrees varied occasionally for a short time down to 80 degrees. This change of the temperature is needed to aerate the eggs inside, for as the eggs cool, the air inside contracts and air from outside passes through the shell. Moisture is also needed so that the eggs are sprinkled now and then with warm water. When the chickens are hatched they are fed with any good food, but mostly with cracked wheat or oatmeal at first, or a cake of corn meal with eggs in it, and a little sugar is good for them at first. They will eat quite readily, but it is desirable to teach them to drink by taking one in the hand and dipping its bill in the water in a shallow dish. The chicks are kept at first in a brooder for a week or more until they get strong. After that they may be put into a glass covered run outdoors and fed six times a day, until they are strong enough to go at large in good weather in a yard. An incubator that will hold 200 eggs will cost about \$40. It is not advisable for any person to try this business until he has had successful experience with fowls hatched in the usual way. For ordinary purposes, one acre of ground, divided into two yards, each to be used alternately, is required for 100 old fowls. There should be another yard, or several of them, of a quarter of an acre each, for the hens with broods.

TOO MUCH GREASE.

Correspondent Farmers Review.

I want to give a little bit of advice drawn from some of my very recent experiences. You know that I believe in grease as an antidote for lice. I have used it for years with such perfect success that I saw no reason why anyone should be troubled with the pests. I really never believed that lard, pure lard, could become a fatal weapon. Well, I have learned another lesson at a cost of only five chicks. Why will people never let well enough alone? My mode of application has heretofore been to put a little lard on the heads, a little under each wing, and a little around their tail feathers. This is the "well enough," with which I should have been satisfied. But I was not. I had one hen with a brood of fifteen chicks, the finest brood that I have had this year. I found they had some lice, and at once applied the lard. I thought so much of that beautiful little flock that I used more care and more lard than usual. I drew my lard finger over their backs from head to tail; I put great lumps of lard under each wing and so on. I also put liberal lumps under the

wings of the mother hen. When the sun had melted the lard you should have seen those chicks. They looked as if they had fallen into an oil bath. Alas! the result. I do not know in what way the lard really affects the skin, but it seems to harden or blister the skin. Anyway, all of them had a terrible contest with stiff skin, and five lay down and died. The other ten recovered after a week of apparent suffering, though even they seemed stunted somewhat by the grease. Now I am just as much an advocate of lard as ever, only I want to advise the readers to be careful in making the applications.

Leather gets

hard and brittle—use Vacuum Leather Oil. Get a can at a harness or shoe store, 25c a half-pint to \$1.25 a gallon; book "How to Take Care of Leather," and swob, both free; use enough to find out; if you don't like it, take the can back and get the whole of your money.

Sold only in cans, to make sure of fair dealing everywhere—handy cans. Best oil for farm machinery also. If you can't find it, write to VACUUM OIL COMPANY, Rochester, N. Y.

Rough Coated Scotch Collie (Shepherd) Dogs, invaluable to farmers and stockmen. Pups for sale from trained and registered parents. Address FRYTOWN POULTRY FARM AND KENNELS, Hannibal, Mo.

EGGS FOR SALE. Black Langshan excellent, 42 per 15. H. J. MARTIN, 301 Main street, Dallas, Texas.

Eggs for Hatching

From all leading varieties of thoroughbred poultry. Fit Games a specialty. Price list on application. Shipped if convenient. B. F. GAMROCK, Blooming Grove, Texas.

Uncle Snort's Poultry Yards.

Two pens extra fine Black Langshans, one pen White Langshans, one pen Brown Leghorns. Eggs, \$1.50 per sitting. White Langshans, \$2 per sitting. Address UNCLE SNORT, Waxahachie, Texas.

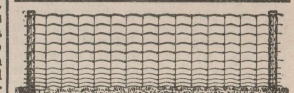
Elmwood Poultry Yard.

The largest Poultry Yard in Western Texas. Have won more first premiums at the Dallas State Fair than any other breeder in the State. Have eggs for hatching at \$2 for 13 from the following breeds: Silver Spangled Hamburgs, White and Brown Leghorns, White Minorcas, Plymouth Rocks and Langshans. R. A. CORBETT, Baird, Texas.

"BLACK HAWK" CORN SHELDER

Buy from dealers, or write for price, terms and freights.

A. H. PATCH, Clarksville, Tenn.



Protection.

De shepherd of de sheep fole, Him say, "Oh! wool is cheap, But it's part of my religion, That dogs shan't kill de sheep."

So he put de Page Fence all aroun' De young an' fat, de ole an' thin, And de dogs dey howl an' knish der teef, For dey know dey can't get in.

PAGE WOVEN WIRE FENCE CO., Adrian, Mich.

EUREKA THE CRESCENT HOTEL

Is the FAVORITE RESORT for Texans.

Eureka Springs, Ark., is reached in the most comfortable manner on the

Santa Fe "Limited"

A Solid Vestibule Train.

Address Manager, Crescent Hotel, Eureka Springs, Ark., for pamphlets and hotel accommodations, and

W. S. KEENAN, Gen. Pass. Agent, Galveston, Texas, for information regarding rates and time tables.

QUESTIONS AND ANSWERS.

Will you please tell me where I can get six chickens of the Brown Leghorn breed, one rooster and five hens; also the price, delivered in McKinney?—N. J. LAMB, McKinney, Texas.

Ans.—Brown Leghorns are advertised in this paper. Write for prices to the breeders.

Please give me recipe for making peach cider the cheapest way; also tell whether alkali is injurious to apple trees.—T. S. PATR, Bridgeport, Texas.

Ans.—Simply grind the peaches and express the juice, same as apples, being careful not to mash the pits. Use before it gets too hard. Some alkaline substances, potash for instance, will be beneficial to apple trees. Much of the alkaline soils found in Western Texas are injurious until the alkali is washed out by rains or irrigation. If you have such soil it would be well to send a sample to Prof. Harrington, College Station, to be analyzed.

I want to know when to sow alfalfa, if to sow in spring or fall; and where I can get the seed, and what is the price.—S. E. MARSH, Benett, Ark.

Ans.—Sow 15 pounds per acre on well prepared land the first rains in September. On clean land it may be planted in early spring, after danger of frost is over. Any of our Southern seedsmen can supply the seed. Seed are now worth about \$3 per bushel.

Well, with regard to the bald barley, I don't know whether I will be able to pay for any or not. Please let me know what I will have to pay for it there. It will have to be shipped to Kerrville, and then I will have to pay 50 cents per 100 pounds freight from Kerrville. So it may cost more than it is worth to get it here. If I can get any, I want 30 bushels. Let me know when to plant to have the seed prepared for planting.—D. O. KIRKLAND, Junction City, Texas.

Ans.—Plant first season in September, or a week or two earlier is just as well. Holloway & Co., Dallas, Texas, can supply you at \$1.75 per bushel.

When is the time to sow Lespedeza (Japan clover) and how much seed per acre is generally considered necessary? Who has any of the seed for sale and price per bushel? Will red clover do well on black bottom poorly drained land?—J. G. OLEFIELD, Lake Providence, La.

Ans.—Sow about 1st of March, one-half bushel seed per acre. Any Southern seed dealer advertising in this paper can supply seed. Write to them for prices, etc.

Will you please inform us where bois d'arc can be found in sufficiently large quantities to justify putting in a spoke and wheel factory, and put us in communication with proper parties, etc.?—TEXAS CO-OPERATIVE MFG CO., W. P. Linthicum, Secretary, Box 201, Waco, Texas.

Ans.—There are many localities in Fannin, Lamar, Hunt, Hawkins, Delta, and other counties in North Texas where bois d'arc timber is abundant, and we publish the above question with the request that persons in such localities will correspond with the Waco company, and hope that the proposed industry will be established and prosper.

Please tell me what is the best absorbent to use about a stable, keep down bad smells and make the air sweet. Lime is generally recommended, but I am not satisfied with it. Common land plaster is recommended, but I have not tried it.—AARON SIMINSON, Winona, Texas.

Ans.—Lime is oftener recommended and more used than anything else, but it does absolutely no good. It does not absorb odors, but turns loose odors that were never smelted before. Land plaster is good. Dry dust from a clay road, is excellent. Judging from experience alone, the dust is even better than the plaster, and it is cheaper. Gather it by wholesale in dry weather and keep for emergencies, as well as general use.

VETERINARY.

When veterinary advice is desired by mail and without delay, Dr. Folseiter should be addressed directly, and one dollar enclosed to secure prompt attention. Queries addressed to TEXAS FARM AND RANCH for publication will be answered, each in turn.

Please answer the following question through TEXAS FARM AND RANCH: What will cure what is commonly called wind-galls on horses? H. H. FARMER, Alvarado, Texas.

Ans.—Windgalls on horses are incurable. If the horse is allowed to go barefooted they generally disappear. They generally do no harm, only as eyesores.

Cattle in this section are dying, apparently without cause. They are in good condition, on good range, have plenty of good water and shade. Some are in pasture, others are on open range. They seem to drop around three or four days with their heads down, seeming not to care to eat or drink; they then are prostrated with what seems to be a nervous rigor, and die in from twelve to twenty-four hours. Sometimes while standing or walking around, they will fall heavily to the ground, never to

rise again. On cutting one open it was found that its kidneys were dark spotted, and almost black, and soft. Young cattle seem to be the only ones affected materially. Please state the disease and a remedy, and oblige the cattle men of this section.—J. T. BILLIPS, Ballinger, Texas.

Ans.—From your description we judge your cattle must suffer from a spinal meningitis, caused by some blood contamination. It would require a personal examination of the sick ones and their surroundings by a competent veterinarian to decide the cause and remedy. If the disease extends to any alarming extent, you had better correspond with the State Live Stock Sanitary Board.

ANSWERS TO QUESTIONS ABOUT GRASSES.

GEO. H. HOGAN.

R. A. Blackshear: No. 1 is Eragrostis capillaris, and of little value except in early spring, when stock eat it with a relish. The hay from this is very light and not very nutritious.

No. 2 is Eragrostis purshii and fully described in last issue; is of no real value; it is locally called stink grass, in consequence of the foul odor when bruised in the green state.

No. 3 is Panicum capillare, of little value except in the far west where it is sometimes cut for hay, and where it has the common name of "fools hay" from the fact that the extreme lightness of the dry hay is very deceptive when you come to weighing. It is generally found growing in the same localities as No. 1, as herein described.

Now the vine sample is a new one on me. I would like to have a sample with root, flower stalk and seed, and if you will send, provided it is relished by stock; if not, I do not care anything about it.

Mr. George H. Hogan, Ennis, Texas:

Dear Sir—I am a subscriber to TEXAS FARM AND RANCH, and I see you will answer questions on grasses through that paper, so I would be pleased if you give me some information about the inclosed grass. I find it in my garden, and think it was brought here with some seed. I would like to know the value of the grass for hay or pasture, if any. Is it annual or biennial? If valuable, the best mode of, and time of planting? Name its native land. I have noticed the different grasses recommended, and I invested in some seed last spring, (1894). I bought one pound Colorado grass seed, and planted it, and raised about one-half bushel of seed. I planted that seed this spring, (1895), but only a few scattering seed came up. Millet, which I planted at the same time, will soon be ready to cut. The grass seed, probably, was not sowed at the right time. It was sowed May 28th. Where the seed was planted last year a new crop has come up and promises to make more seed, but it will take it a good time later than the millet to mature. Now, in TEXAS FARM AND RANCH of June 29th, you write of Colorado grass, the grandest of all annuals, good for everything—when you get it, but further state that you have been trying for three years to get a start. Now, as it seems to be planted every year, and it seems to be hard to get a start, I should be pleased if you would give a comparison of millet and Colorado grass, and state the latter's advantages; also time and depth of planting. I have sown at the same time, (May 28th), one pound of Rescue grass, and one pound of Hungarian broom grass, but neither showed up above ground. Can you offer a suggestion why the seed did not grow? It seemed very light and chaffy.—FRANK FICKERT, Altus, Texas.

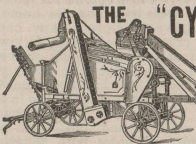
The sample sent is the Eragrostis purshii, commonly called stink grass. When bruised in the green state it gives forth an odor very like a mad rattlesnake, and for this reason, stock seldom eat it after it goes to seed. This has been fully described in late numbers of our paper. Mr. Fickert writes an interesting letter, and shows he is a progressive man. Now about the seeming contradictions in regard to the Colorado grass: I have always tried to have it understood that my little experimental ground is high, dry, black or loamy sand, that had considerable mesquite timber on it at one time, and nearly all my experiments have been directed to find the best forage plant for my particular piece of ground. Thus I find some plants that will not do at all with me, that seem to give grand satisfaction in other localities. The Crimson clover, for instance: I have nursed it, and experimented in a dozen different ways, and always find it a sick baby on my hands, and really good for nothing. Likewise the burr clover, and many

other plants, and I now think the reason the Colorado grass did not start off better with me was, that the seed I planted were immature. I find now, even since my last letter, it is spreading all over the one-half acre of land set apart for it in an old peach orchard. Now, my advice to Bro. Fickert would be to go right ahead and cut his millet at the right time, and let the Colorado grass take care of itself, which it is eminently capable of doing, and he need

not bother about sowing it every year, either. Now about his Rescue grass: This should have been sown in August or September on top of the ground, or as shallow as possible, and I should have sown the Hungarian broom at same time. Both these are grand winter annuals, and if sown in spring are killed down by summer droughts, although some of the seed may be dormant and show up the coming winter. Better watch this.

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THE "CYRUS ROBERTS" SHUCK SHELDER

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PARLIN & ORENDORFF CO., Dallas, Tex.

THE ST. LOUIS REPUBLIC

WILL DISTRIBUTE

FIFTY THOUSAND DOLLARS IN FREE GIFTS To Subscribers of the Twice-a-Week Edition.

One thousand special gifts, valued at \$4,807.10, have been distributed to subscribers to the Twice-a-Week Edition of THE ST. LOUIS REPUBLIC who sent in their orders in July. Another list of one thousand, valued at \$5,607.25, is offered to the subscribers of the Twice-a-Week Edition, who will be offered September subscribers. In addition a valuable engraving is given every subscriber during these two months making a total of 1,000 special gifts. The subscribers in August is given below, and the list for September will be announced September 1st. The first 700 subscribers during August who send correct answers to the question "Where does the Word 'Gift' first occur in the Bible?" will be awarded, in the order their answers are received, the following one thousand special gifts:

FIRST 700 GIFTS:

1st Correct Answer—One year scholarship, including board at "The College," Lexington, Mo., Rev. W. A. Wilson, President.....	50.00
2nd—Round trip ticket to Denver via Burlington Route.....	40.00
3rd—Fine Breach-loading Shotgun.....	40.00
4th—Round trip ticket to Cotton Station, Exposition, Atlanta, Ga., via L. & N. and North & South.....	37.50
5th—Gold Filled Hunting Case Watch.....	35.00
6th—China Dinner Set.....	25.00
7th—Steamboat trip.....	20.00
8th—Barnes' home course instruction in shorthand.....	20.00
9th—Pair Fine Opera Glasses.....	8.00
10th—Gold Filled Hunting Case Watch.....	35.00
11th—Solid Gold Ring, 18 karat.....	8.00
12th—Remington 32-Caliber Rifle.....	6.00
13th—Solid Gold Ring, 18 karat.....	8.00
14th—Remington 32-Caliber Rifle.....	6.00
15th—Five Dollar Gold Piece.....	5.00
16th—Subscription to "North American Review".....	15.00
17th—Oxford Teachers Bible.....	15.00
18th—Political and Geographical Map of United States (1 color).....	15.00
19th—Set Rogers' Table Spoons.....	4.50
20th—Set Rogers' Tea Spoons.....	4.50
21st—Gold-filled Thimble.....	3.00
22nd—Fine Umbrella.....	2.00
23rd—Miniature Atlas.....	3.75
24th—World, 1825 each.....	3.75
25th—Gold and Silver.....	15.00
26th—Fine Engraving.....	15.00
27th—Tickets two days great Louisiana Fair, 1895, Oct. 12 to 15; 50c in premiums.....	20.00
28th—Fine Engraving.....	15.00
29th—Fine Engraving.....	15.00
30th—Dollars Package Old Coin Smoking Tobacco.....	5.00
31st—One Silver Dollar each.....	5.00

LAST 300 GIFTS:

1st—Graphic Atlas World, \$1.50 each.....	22.50
2nd—Remington 32-caliber Rifle.....	6.00
3rd—Sub. North Am. Review, \$5 each.....	15.00
4th—Gold Watch Chain.....	5.00
5th—Oxford Teachers Bible.....	15.00
6th—Geo. Political Map U. S., \$5 each.....	15.00
7th—Set Rogers' Table Spoons.....	4.50
8th—Set Rogers' Tea Spoons.....	4.50
9th—One Gold Coin.....	2.50
10th—Gold-filled Thimble.....	3.00
11th—Fine Umbrella.....	2.00
12th—Miniature Atlas World, \$1.50 each.....	3.75
13th—World, 1825 each.....	3.75
14th—Gold and Silver.....	15.00
15th—Fine Engraving.....	15.00
16th—Tickets two days great Louisiana Fair, 1895, Oct. 12 to 15; 50c in premiums.....	20.00
17th—Fine Engraving.....	15.00
18th—Dollars Package Old Coin Smoking Tobacco.....	5.00
19th—One Silver Dollar each.....	5.00

SUMMARY—Total value of 1,000 Special Gifts to be awarded for answers received prior to August 31st. Gifts to be given during September \$4,135.25; 25,000 engravings, National Capitol, etc., \$1 each \$4,500.00. GRAND TOTAL \$41,540.25.

EVERY SUBSCRIBER SENDING AN RECEIVES A GIFT.

Subscribers sending answers too late to secure one of the first 700 special gifts and too early for the last 300 special gifts will each be presented, during August, with a HANDSOME ART ENGRAVING, consisting of the PORTRAITS OF EVERY PRESIDENT OF THE UNITED STATES, printed on extra quality paper; size 12x24 inches, worth ONE DOLLAR. The person desiring to secure one of the special gifts listed above must send in not later than August 31st an answer to the question printed above.

Address: The Twice-a-Week Republic, Republic Building, St. Louis.

Household.

Address all letters for this Department to Mrs. S. E. Buchanan, Dallas, Texas.

THE LAND OF "PRETTY SOON."

Elia Wheeler Wilcox, in Cincinnati Commercial.

I know a land where the streets are paved
With the things which we meant to achieve.
It was walled with money we meant to have
And the pleasures for which we grieve.
The kind words unspoken, the promises broken
And many a coveted boon
Are stowed away there in that land some-
where
The land of "Pretty Soon."

There are uncounted wells of possible fame
Lying about in the dust,
And many a lofty and noble aim
Covered with mold and rust,
And oh, this place while it seems so near,
Is farther away than the moon.
Though our purpose is far, yet we never get
there—
The land of "Pretty Soon."

The road that leads to that mystic land
Is strewn with pitiful wrecks,
And the ships that have sailed for its shining
strand
Bear skeletons on their decks.
It is farther at noon than it was at dawn,
And farther at night than at noon.
Oh, let us beware of that land down there—
The land of "Pretty Soon."

CHAT.

L. Liston, after expressing his admiration for the Household, asks if a young man may be allowed to express himself upon the question, "Which has the greater influence on one's character, books or associates?" He is very welcome to a place in the Household, and we will be pleased to hear from him.

Grace Lunnar writes, she cannot resist coming so often, for she does so much enjoy the Household. We feel sure there is no need of apology, Grace. We are always happy to have you come, and enjoy your graceful, cheery letters. We hope you may find both the time and opportunity to cultivate your talent for drawing and painting. It is a most delightful recreation, one whose charm increases with every effort, whether it be a success or a failure. It leads one constantly to desire and seek higher achievements, thus ennobling and strengthening the good that is in us.

Dear Mrs. Vanderhoef does not forget us, even when among the dearer ones of her childhood's home. Mr. Vanderhoef wrote us that she had been called to the bedside of her aged father and mother, who were both very ill. She writes: "I am so thankful that they are both recovering, though both are quite feeble. One sister from California, one from Wisconsin, and one who lives here, have met at home for the first time in twenty-nine years. It has been a blessed reunion, but we soon must part again, to meet, perhaps, no more on earth." How sweet must have been that short season of companionship, after the long separation. We feel sure that the whole Household will rejoice with Mrs. Vanderhoef in this great pleasure.

Mrs. Johnson sends us an excellent recipe, which she took from *TEXAS FARM AND RANCH* several years ago. Many thanks for the same. It is not always only the bread which comes back, but the bread cast upon the waters comes back, too. We are sorry we did not have the opportunity of meeting Mrs. Johnson when we visited Wichita recently. Thanks for your kind words and good wishes.

Glenwood's is, indeed, a busy life, and we esteem the call upon the Household more highly on this account. We well know the value of even a half hour's time, when there are so many calls upon every hour of the day. We shall expect, and hope for a repetition some time in the near future.

It seems that the lessons learned from reading St. Elmo were as various as the criticisms we have had. Mrs. Ownsby thinks it gave her a thirst for knowledge, and awakened a desire to be a more conscientious and consistent Christian. What do those who believe there is only harm and evil to result from novel reading think of this? Surely in this instance great good resulted. But on the other hand, how many read a novel who find nothing in it but amusement? It is only the thoughtful who are benefited, those who look beyond the plot, who seek the grain rather than the chaff.

Marguerite Sharheart comes again, and tells us how she enjoys Longfellow, and especially *Evangeline*. Her sympathies are all with the Acadians in their cruel exile.

Miss Thomasine Walker, another young lady, comes forward with an oft-

tried recipe for chile con carne. Also, a good recipe for ginger snaps, for both of which we feel greatly obliged. Miss Tommy is very busy canning, preserving and jellifying for an exhibit at the coming State Fair, and as she is a notable young housekeeper, we hope she will carry off all the prizes. There being so much fruit this season, we feel sure that the exhibit in the ladies department will excel all former years. Can any one give Miss Tommy the information she seeks? She wrote to several wholesale pickle houses, and while they were exceedingly polite and prompt in their replies to her letters, they were silent on the subject of color.

Kendall Perry's instructions for making beautiful dress trimmings at home are both simple and helpful. Any one who uses a crochet needle can follow her instructions and handsomely trim a dress, which might otherwise be very plain. Kendall Perry has not graced the Household with her presence in a long while. She writes though, that she always reads it and longs often to put in a word, and notes with delight how it grows and brightens every issue; but she is such a busy woman she can only come occasionally.

WHAT ARE OUR CHILDREN READING?

MRS. F. W. VANDERHOEF.

No home is complete without its books and pictures, and how carefully should they be selected, for they exercise a great influence either for good or evil over the inmates. We form a new acquaintance to-day, chat sociably upon subjects pleasant to both of us, but by to-morrow you have almost forgotten that you ever met them. But the book or the picture which is impressed upon your mind may influence your whole life. With what delight and wonder our minds are filled as we read books of travel, and upon the camera of our imaginations we paint the sceneries sublime and grand; and our hearts glow and throb as we journey (mentally) with them through strange lands. Let us be sure that the heroes they read about are possessed of characters worthy of admiration and imitation, for their souls will thrill with a deep ambition to become brave and noble like them. We look well to the food designed for physical needs; then how much more important that our moral and intellectual food should be the best and purest. No home, however decorated, is complete unless adorned by books of the deepest, purest sentiment, and pictures—lovely glimpses of scenery or pictures of nature's noble men and women. Next to their associates, their books have the most influence in forming their thoughts, and consequently their characters. Our houses now-a-days are filled with what should be good reading, and in moments of leisure we all turn to them, seeking food for the hungry brain, and with a child, good, bad, and indifferent reading all come in for their share of attention. And the loving parent who, under no consideration, would choose wicked, bad companions for his child, very frequently does more harm by allowing them to read books which are filled with the most rank poison, and the slime from the serpents' folds is visible between the lines. Better that in reality the fangs of the most poisonous serpent should sink into the quivering flesh than those poisoned thoughts and principles should sink into the heart and mind to inevitably be followed by mental and moral degradation and death. Fortunately good reading matter, wholesome and elevating, is both abundant and cheap, and those of the highest merit are easily obtained, and not too expensive for people of moderate means. The Youth's Companion is accepted as the standard of the best reading for young people. It has always been in our family, and I feel that in this way our children have had for companions the truest and noblest of people. One of their books last year was a complete history of Livingston's and Stanley's travels in Africa, nicely illustrated and attractive, minutely describing country, inhabitants, manners, customs, wars, everything of importance or interest, and still in language easily understood by them. This year one of the number was a large bound book, entitled *Through Arctic and Tropical*, by W. W. French; illustrated, and giving good descriptions of all countries and climates; and so sensible, still strikingly vivid, were the descriptions given that one was held spell-bound. Another book is *Arctic Explorations*, another *Around the World*, then *Robinson Crusoe*, *Kane* and other Explorers, *Fren-*

mont's *Travels*, Perry's *Discoveries*, etc., besides scores of story books, papers, chatterbox books, etc.

This is the close of a real rainy day (a great rarity here in Dakota, and duly appreciated). I thought to have this day for my very own, to read and write and rest soul and body. But you see I reckoned without my host, and consequently had to wear those "slippers full of pebbles." At first I felt as though walking on eggs and (don't say it loud) the pebbles really seemed to assume gigantic size. But in the companionship of the children I soon forgot that they were there, and entered with zest into the pleasure of cutting out pictures, pieces of poetry, young people's pages, etc. How happy we were, all of us children together. Then came an hour of drawing. I cannot see why this is slighted in our country schools, but it almost always is, and I consider it very important. I also have each of them a nice home-made drawing book, and insist upon each map being drawn as they study geography. The afternoon passed away quickly, and after the tea, which each one helped mamma to get, I sat down, and had just "think on little thought," when Baby E4, who is a regular story fiend, brought his book of bright colored pictures, and curling down in my lap, coaxed, "Sing a story, mamma; sing a story." And so went another half-hour before the tired eyes closed. But, of course, all mothers are living through similar experiences every day of their lives, blessed experiences in which their children are receiving the love and companionship so essential to them, and she is seeing some of the busiest, and withal the happiest days of her life. If only every mother would live with their children instead of for them.

THOUGHTS FROM A BUSY WOMAN.

GLENWOOD.

Dear Household: I have been an interested reader of *TEXAS FARM AND RANCH*, and having first read your good letters in July 13th, cannot refrain from expressing a few thoughts, if the sisters will bid me welcome.

I see St. Elmo is still under discussion. Allow me to say I think it one of the grandest books ever written. I admire all of Augusta Evans' (Mrs. Wilson) writings. I once saw a sweet note she wrote to a friend of mine. The whole tone of her writings is deeply intellectual, with some such grand, pure characters. I do not admire St. Elmo's character, but it shows how steeped in wickedness a man may be, and yet become completely changed by the power of God and what an influence for good may be exerted by a pure high-souled, God-loving girl or woman.

I am fond of reading, but am kept so busy—being a bread-winner that I have very little time. I am postmaster, have several agencies, do my own cooking, a member of a missionary society, teacher in Sabbath school. Now don't you think I have my hands full, and need all the comforting and encouraging words that I can get out of the many good letters of the Household? I am helped often by what I read.

I think Ruth Herriot's plan of exchanging photos and autos would be very pleasant. It would be delightful to have an album of unknown, or, rather, unseen friends.

Many other subjects suggest themselves, but for the present I must say good-bye.

Sylvania, Ark.

SILK CROCHET AND PASSEMENTERIE.

KENDALL PERRY.

We are glad to note silk passementerie and crochet laces back for trimmings, and made in wash silks. To many hard pressed mothers, whose nimble fingers and active brains are very often their largest stock in trade, this, especially, will be gratefully received.

Many dainty dresses can be trimmed at trifling expense and given a dressy, finished appearance by making a cord chain, or braid of silk in simple chain stitch. This can be used in finishing of bretelles, cuffs, frills, in rows of twos and threes. For making, use a coarse steel hook and some of the new crochet silk. It is a heavier grade than knitting silk, and harder twisted. Comes in all colors, fast dyed, washing nicely, and very soft in texture. In making the chain draw evenly but not tightly; let every stitch be the same length. Hold the chain straight in your left thumb and fore finger, so that it will not twist. You will see the old-style common chain transformed into a braid, flat on one side, but with a pretty distinct

raised loop on the other. Sew it flat side down to the cloth, or dress, to be trimmed.

Still better effects may be had by taking two contrasting shades of silk and crocheting together. Asiatic filo and Roman floss, or Boston art silk and Asiatic rope silk in one chain; either of these combinations. And I have found that this simple cord of chain stitch can be used to good purpose in making one's own frogs in Honiton lace silks, as passementeries for collars, cuffs, reverses, ornaments, the fancy, many shouldered capes that adorn our summer and fall wraps—and oh, an endless lot of usages one can turn it to.

These Honiton silks are in black, white and yellow. It is pliable, we take any curve. The round wheel-like disc patterns can be easily formed; and those Grecian styles of braids, so much in vogue a few years ago, can be followed easily. I could sketch them easier than describe them. Sketch, or draw, the pattern; transfer, if you choose, to light tissue paper, baste to the goods, sewing the cord chain on by hand, over the lines; when done, pick carefully with a needle point all the intervening space where the paper shows.

If beads are threaded on the spool of silk before commencing to crochet, and slipped up at intervals, an excellent quality of bead trimming is made, and one thing you may be sure of, those beads will never come off unless they are broken, as beaded passementerie often does, giving way just where the beads are the heaviest, because strung on such fine cotton thread.

Tonica, Ill.

A MISTAKE CORRECTED.

MARGUERITE SHARHEART.

Dear Household: It has been quite an elapse of time since I made my first visit to the Household, or at least it seems to me it has been, and now I am enjoying the pleasure of writing once more.

As there has been quite a discussion going on in the Household Department here of late on the subject of reading, I will say I am a dear lover of good literature, although I have not been blessed with having many good books or papers to read. I have read a part of Cooper's works and like them ever so much. Now a word or two on that poem entitled *Evangeline*, written by Longfellow. I think it is one of the saddest poems I ever read. Who could not pity those poor Canadians, driven from their homes and separated from fathers, mothers, brothers, sisters and sweethearts, some forever, and others until they came almost to life's end? The Raven, by Edgar A. Poe, is another one of my favorite poems. How many have read Father Ryan's poems?

Please allowing me to correct a mistake in my last letter. It was Mrs. J. B. Gay's letter I was speaking of.

I wonder why it is Catharine has made her escape from the Household and why she does not write again.

I would like to know who it was that treated me so nice as to send me the song ballad I asked for in the Household from Decatur. There was no name with it, but many thanks to who ever it was.

Would like to correspond with either sex.
McDade, Texas.

INFLUENCE OF BOOKS AND ASSOCIATION.

L. LISTON.

Dear Household: After reading in silence for a long time, I have determined to write a few lines to the Household, and whether they are worth the space is for you to decide. The literary discussion now going on is very interesting, and would be more so if I had the books that are being discussed. How any one could decide against Dickens after reading his works I cannot see. Almost every one teaches some moral, or is directed against some evil. I read a short story by Dickens a few years ago; it bore his distinctive mark in his beautiful descriptions, and clear cut characters. Like his other books, his characters were taken from the lower walks of life, even the slums, but it showed crime in its natural guise, and left the reader without any temptation to follow the bad examples; while the beautiful characters he knew so well how to paint, invited emulation by the good they accomplished. This book, "The Haunted Man," taught that in the memory of past wrongs we find many present pleasures, and that to forget the past is to sever all ties that make us better or link our lives with

About Bees.

BEE KEEPING ON A SMALL SCALE.

American Bee Journal.

In Canada, far more than in the United States, bee keeping is practiced in a small way, and apiaries of two or three colonies are quite common. In the United States bee keepers discourage that kind of thing. Why bee keeping on a small scale should be frowned upon it is not easy to perceive. The extensive gardener does not try to put down gardening on a 7x9 area. The dairyman does not object to householders keeping a family cow. Nor is it easy to see why objection should be made to a family producing its own stock and store of honey.

What does deserve to be discouraged is entering on bee keeping, whether on a large or small scale, in utter ignorance of the pursuit. It is the height of folly for people to suppose, as many do, that it is only necessary to get a colony of bees and leave them to shift for themselves. The home garden and the family cow will not thrive if thus treated. There is a "know how" connected with everything which is essential to success. This must be acquired in some way or other, or it is folly to attempt gardening, cow keeping, bee keeping or any other pursuit.

As a scientific pastime, bee keeping on a small scale is greatly to be commended, apart from any economical or financial reasons. I know a doctor in Montreal who for several years kept an observing bee hive on a balcony opening from an upstairs window, and derived no end of pleasure from observing and studying the ways of "the little busy bees." It is well if our recreations can be made to increase our stock and store of useful knowledge.

According to the London Times the yearly production of beeswax in continental Europe is about 15,000 tons with a value approaching £1,350,000. Of honey the annual production is estimated at 80,000 tons and its value at \$2,200,000. In the United States there are about 2,800,000 stocks of bees producing annually some 30,000 tons of honey. No statistics relating to this industry are collected in Great Britain.

CHEERFULNESS AT A PREMIUM.

Southern Cultivator.

Perhaps there is no such sweetener of human life as cheerfulness. Though this world does not seem to all a vale of tears, still we have here enough cloudy days to make each sunny day a subject for rejoicing.

Truly, "a merry heart doeth good, like wine," and this stimulant is needed in the American household of to-day. The times are hard, the nervous strain is great, the blues are prevalent, the field for cheerfulness is broad.

It is encouraging that the field for each one of us lies within our own premises. We should begin work upon it at once, even at the first hour of the day—at the breakfast table. In how many families the father eats hurriedly and silently, or eats and reads his morning paper at the same time; the mother, tired from cooking breakfast, thinks that a sufficient excuse for not "fixing up;" the children come in late, rubbing their eyes. There is no pleasant chat, no one eats with a relish, and cheerfulness not invited to the morning meal will rarely visit the household that day.

While some people are naturally cheerful and others morose, still both qualities are easy of cultivation and rapid growers. Cheerfulness is more than simply "looking on the good side of things"—it is an inward, spiritual grace. I once read of an old woman who had this sort of holy cheerfulness. She was invariably "chipper." "Grandma, I do believe you would laugh if you were dying," said one of the children to her once.

"Well," the old lady answered, "so many folks go to the Lord with a long face, I guess he will be glad to see me come to him smiling."

A CONVENIENT CUPBOARD.

Harper's Bazar.

Now that the finishing of the modern dining room almost always includes a high wooden wainscoting, a ready-made support is at hand which might well tempt the amateur carpenter to try his or her pretence hand at making a corner cupboard.

Where space is cramped, a cupboard

of this sort could take the place of the ordinary sideboards, as it is not supported from the floor, and would, therefore, not occupy room needed for other furniture.

It may be of any size desired, but that most in use measures about four and a half feet in height and thirty inches across. Make the sides of common pine, and fit them closely into the corner, bracing well with cleats of wood.

It is very important that these side supports should be strong, especially at the top, as the weight is considerable, even when the closet is empty.

A three-cornered pine board forms the bottom, and a similar one closes in the top, while a movable shelf an inch in thickness divides the whole in two compartments.

If the doors are entirely of wood, they may be stained and polished and ornamented with linacrusta, which has the appearance of carving, and is easy to apply; or, which is handsomer, glass in leaded panes, which might be set in the frame work, at least of the upper part, giving the old-time effect, which is considered desirable just now.

Cover the back, which will be visible if the doors are of glass, with folds of soft yellow silk, as prettiness shows to great advantage against the background; and screw small brass hooks into the under part of the board which forms the top of the cupboard, to hold the cups which are not in every-day use.

The lower compartment may be used for the dishes that are not so ornamental, or even for sweets or cake, or the bottle of wine on which it is wise to turn a key.

Johnny—I got a book as a prize to-day for havin' a good memory.

Mamma—What is the name of the book?

Johnny—I have forgotten.—Philadelphia Record.

TOBACCO'S TRIUMPH.

Every day we meet men who have apparently lost all interest in life, but they chew and smoke all the time and wonder why the sunshine is not bright, and the sweet birds' song is so discordant. Tobacco takes away the pleasures of life and leaves irritated nerve centers in return. No-To-Bac is the easy way out. Guaranteed to cure and make you well and strong, by Druggists everywhere.

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SECOND TOUR.

Seventeen days; cost \$160. Leaving St. Louis, Wednesday, August 7th. To the Yellowstone Park, by way of Kansas City and Lincoln, Neb., through the Black Hills, by way of Hot Springs, Deadwood, Spearfish, Lead City, Custer Battlefield, six days' circuit of Yellowstone Park, returning via Northern Pacific railroad, Minneapolis, Lake Minnetonka.

THIRD TOUR.

Fourteen days; cost, \$130. Leaving St. Louis, Wednesday, August 14th. Through Colorado, via Denver, Manitou, Pike's Peak, Colorado Springs, Royal Gorge, Marshall Pass—around the circle—Mt. Ouray stage ridge, Rio Grande Southern, Rico, Durango, Glenwood Springs, Leadville.

WHAT THE COST INCLUDES.

The cost of tickets for these tours includes all necessary expenses en route—railroad transportation, sleeping car fares, meals en route, lodging at hotels and on car, carriage drives and side trips as specified.

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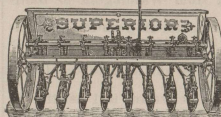
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Cousins' League.

The Cousins League will hereafter be merged in the Household Department. The cousins should address their letters to Mrs. S. E. Buchanan, care of TEXAS FARM AND RANCH, Dallas, Texas.

GRANDMA-LAND.

Harper's Young People.

There's a wonderful country far away,
And it's name is Grandma Land;
'Tis a beautiful, glorious witching place
With grandmas on every hand.
Everywhere that the breezes blow,
Just grandmamas! Just grandmamas!
In this wonderful country far away
Where grandmamas abide,
In this beautiful witching Grandma Land
The good things wait on every side—
Jam and jelly cake heaped in piles;
Tarts and candy 'round for miles;
Just Good Things here! Just Good Things
there.

In this wonderful country far, afar,
Where blow the candy breezes,
In this beautiful, glorious pudding-land
Each child does just as he pleases.
All through the night, all through the day,
Every single child has his way.
Each his own way! Just as he pleases!

In this wonderful country, far away—
In this gorgeous grandma clime—
When tired children can eat no more,
There are stories of "Once on a time."
Stories are told and songs are sung,
Of when the grandmamas were young—
"Once on a time!" "Well, let me see!"

To this wonderful country far, afar,
Where only good things stay,
To this beautiful, glorious Grandma-Land
Good children only find their way.
But when they sleep and when they dream
Away they float on the gliding stream
To Grandma-Land! To Grandma-Land!

CASH FOR THE GIRLS AND BOYS.

I am very anxious to know just how well and how entertainingly the boys and girls of the League can write, so I have arranged with the consent of the manager, to offer four cash prizes, for the four best articles written by the boys and girls of the League. Two prizes are offered to the cousins between the ages of sixteen and twelve and two to those under twelve years of age. The first prize of \$3 will be given for the best story founded on the history of Texas; \$2 will be given for the second best, upon the same subject. Write in simple language giving facts or traditions, avoiding long words and repetitions.

To those under twelve years for a bright, well written letter, covering two or three pages of commercial note paper. \$2 will be given for the best and \$1 for the second best.

Neatness in penmanship, spelling and grammar, as well as composition will influence the award.

Rules governing competitors:

1st. All contributions must be strictly original.

2nd. The story founded on Texas history should contain from 750 to 1000 words, or from one column to one and one-half columns in TEXAS FARM AND RANCH.

3d. Every communication must be written on one side of the paper only, and with pen and ink.

4th. They must be in hand by the first day of October.—AUNT SALLIE.

Dear Aunt Sallie: Here comes two little boys to join the Cousins' League. We are ten and twelve years old. Our papa is dead. We live near grandpa's, and go there every day. He takes TEXAS FARM AND RANCH. Our school is out, but grandpa is teaching us now. We love our grandpa and grandmas. We live on a farm four miles from town.—HENRY and LEE ROWLAND, Pearsall, Texas.

[It is very sad that you have lost your father, but how pleasant it is to have a dear, good grandpa and grandmas so near you that you can visit them and enjoy their love and care.—AUNT SALLIE.]

Dear Cousins: This is Sunday, and as I have nothing better to do, would like to step in and have a chat with you all—if I am welcome. I see the boys talking about beating the girls so much, I thought it was time I was making my appearance, for that would never do to let the boys say, "We beat them!" Oh, no! Never! never! I do not think that boys are as good at anything as girls are. And now I have this to say: You had better stop trying to beat us, for if you all start we will come up in arms and make you retreat in a hurry. Wont we, girls? Well, I had better close as I see the boys looking cross at me, and that is a sign that I have said enough for this time. I may come again sometime if I

see this in print. Good by.—KATE READY, Thurber, Texas.

[Kate is determined to keep ahead. I like that kind of ambition, not to be outdone in any good thing.—AUNT SALLIE.]

Dear Aunt Sallie: We are two girls, Edith and Ivy. Our ages are thirteen and sixteen years. We would love to correspond with some of the cousins of both sexes. We live thirteen miles from Dallas, in a real pretty little town. We want to exchange songs with some of the cousins. We will send the Maid of Mohe and Diddy Diddy Dodger, for Parting Lovers and The Girl's Won't do to Trust. We both go to Sunday School. We weigh fifty-five and ninety pounds. We will close. Your neices.—IVY BOALES and EDITH FAGAN, Grand Prairie, Texas.

[Edith and Ivy wish to correspond with some of the cousins, also to exchange songs with some one. Cousins, please answer.—AUNT SALLIE.]

Dear Aunt Sallie and Cousins: Would you let a Hunt county boy join the Cousins' League? I have not been reading TEXAS FARM AND RANCH very long, for we have not been taking it long. I am twelve years old and live one-half mile from Lone Oak. I like to live on the farm very well. I go to school in town. Our school was out the 16th of March. I received the prize for several excellencies. I live near the Sabine river. I will try and answer some questions:

First, I will answer Lizzie Rodgers, about the first telegraph line—Miss Ellis, worth sent the first message, which was, "What hath God wrought?" and the line was built from Washington to Baltimore.

The name of the ship which Columbus made his first voyage in was the Santa Maria.

Arkansas was admitted to the Union June 15th, 1836.

Well, I will close and if I see this in print I will write again. Best wishes to all.—WILLIE MEDLEN, Lone Oak, Tex.

[Indeed, all farmer boys are very welcome to a seat in our circle, Willie, and we hope to have you come again.—AUNT SALLIE.]

Dear Cousins: Here comes a little Texas boy, eleven years old. My papa takes TEXAS FARM AND RANCH. I like to read the cousins' letters very much. I see so many nice letters in print, I thought I would write, to. I have one pet; that is a little pony. I go to Sunday school every Sunday. I have written once before, but my letter did not come out in print. I hope this will come out in print this time. Good-bye Aunt Sallie—JIM KELLY, Reno, Texas.

[I am sorry you were disappointed, Jim, in not seeing your other letter in print, and hope you will read the League for a long time yet.—AUNT SALLIE.]

Dear Aunt Sallie: I have been a silent reader of the Cousins' League for a long time, and have decided to write, hoping it will not reach the waste basket. I go to school at Martin Springs. The winter school is out, and has been a good while. The summer school will commence before long. We live one mile from school. Aunt Sallie, you had better come down and help us eat fruit this summer. Cousins, how many of you have two Aunt Sallies? Mama's sister Sallie lives in Arkansas. I have not seen her for a long time. I wish I was like some of the rest of the cousins, lived close enough to call on Aunt Sallie. We live in the country, six miles from Chandler. Aunt Sallie, why don't you have your picture printed at the top of our League? I would be so glad, and I know the rest of the cousins would, too. I will close by asking a few questions. One for Aunt Sallie to begin with: Is Mr. Big Hat, editor of the Little Folks' Corner, of the Dallas weekly News as small as his picture represents him? How many of the cousins have seen Mr. Big Hat?—ROY BROWNING, Chandler, Texas.

[Roy, I wish I could get into the orchard every one of these hot days. I would prove to you that I appreciated your invitation. Little Mr. Big Hat, I am told, is a real, live, tall, handsome woman. So now, what do you think of that? One who writes beautiful little poems of and for children. That is what I have been told, and I think it is correct.—AUNT SALLIE.]

Dear Mrs. Buchanan and Cousins: This is my first attempt to write to the League. I am a little Texas boy, thir-

teen years old. Papa takes TEXAS FARM AND RANCH. I write to the Sunday School and Colportage Helper, Mr. T. C. Boykin and W. C. Luther, editors. I have been a reader of the Cousins' League, and thought I would write. I will close for this time. I hope my letter won't reach the waste basket. I will write again. Your little friend—ROY FARRIS, Anna, Texas.

Dear Aunt Sallie: Here comes a little girl wishing to join the Cousins' League, if there is room for me. I have been reading the Cousins' League for a long time. I like to read the letters. This is my first attempt to write. I wonder what has become of the boys? I have seen very few letters from them. The girls are beating them so badly they are ashamed to write. I am like some of the other cousins. I think they ought to write on other subjects, and not talk about their pets so much. I am a girl, fourteen years old, and can do any kind of housework. I do all mamma's cooking for eleven in family, besides wash and iron. Love and best wishes to Aunt Sallie and the cousins. Bye-bye to all.—NELLIE KELLY, Davis, Texas.

[Certainly there is room. Nellie dear, and I know you must be tired. I think it is too much work for a girl of your age. While you are very smart and dutiful to mamma to do it, it is rather too heavy a burden for young shoulders to bear.—AUNT SALLIE.]

Dear Aunt Sallie: As I have never written to the cousins I thought I would write. A friend of mine takes the paper and I like to read the letters. I am a girl fourteen years old. I have neither father nor mother. I live with my aunt on a large farm. I belong to the Baptist church. I will answer Miss Florence Yarbrough's questions.

Who was fed by the doves?—Elija. Who was the first Governor of Texas?—Henderson.

I will close. If I see this in print I will write again.—BERTHA MCCOY, Aledo, Texas.

[It is very pleasant for the cousins to realize that their letters afford so much pleasure to one another. You are fortunate to have a kind aunt to care for you and love you, Bertha.—AUNT SALLIE.]

Dear Aunt Sallie: I never have written to the Cousins' League; I have never been to school a day in my life, and I am a cripple. I cannot walk a step. I am ten years old. I can't do nothing but mine the baby, and draw pictures. I have one brother and three sisters, and I am the oldest. Our school teacher's name is Mrs. Johnson. I guess my letter is long enough and if I see it in print I will write again.—CORDA E. SEABORN, Pitkin, Ark.

[Dear little Corda, what a sad thing for you, and yet you seem cheerful and contented. I hope, as you are fond of drawing pictures, that you will cultivate your talent and some day make a fine artist. You have learned to write very nicely, better than many of your age who can go to school.—AUNT SALLIE.]

Dear Aunt Sallie and Cousins: I have been a reader of TEXAS FARM AND RANCH for several years and never could have the courage to join the Cousins' League before. So if you will just let me in for a minute, I will talk to you and the cousins. I am a little Texas girl. My father takes TEXAS FARM AND RANCH, and I like it very much. I always turn to the Cousins' League first. Aunt Sallie, you ought to have been down to Manvel this spring to eat strawberries for they were abundant down here. I will close, hoping to see this in print. Your little friend.—BESSIE BURNER, Manvel, Texas.

[I would have enjoyed the berries very much, Bessie. We had them in Dallas,

but very often they were not very nice.—AUNT SALLIE.]

Dear Aunt Sallie: Here comes another farmer boy who wishes to join your happy band. Am I admitted? Papa takes TEXAS FARM AND RANCH and I enjoy reading it very much. I live six miles from Stephenville and eight miles from Dublin. There has been an abundance of rain here lately and I have had a good time fishing. I am not going to school now.—WILLIE HICKEY, Stephenville, Texas.

[You are very welcome, Willie, to the League, and I am glad you are enjoying your vacation so much. I think all boys love to fish, even if they do not catch any fish. Isn't it so?—AUNT SALLIE.]

Dear Aunt Sallie: As I have written one letter, and you were kind enough to print it, I will come again. I have one sister in Texas. She is visiting an uncle. She went there to go to school. Papa is thinking of moving to Texas. I have an aunt living in Marshallville, Tennessee. Once she sent us a trunk of toys, and among other things she sent sister and a large doll each. I will close, hoping to see this in print. I do love to read the cousins' letters. Love to Aunt Sallie and all the cousins.—GENEVA SCRUGGS, Mountain Top, Ark.

[We will be glad to welcome you to Texas, Geneva. Ours is a great state, we think. Arkansas is our next door neighbor, but I have never visited the state.—AUNT SALLIE.]

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our fellow beings. But Dickens is not my favorite novelist, nor are novels my favorite form of literature. Why is it no poet has been named in the Household? (Or I have not seen the name). When I have time to read for recreation only, I prefer some beautiful poem by some master of metrical language. A beautiful poem, like a beautiful tune or song, never grows wearisome. I can read or hear it read again and again, often finding new beauties with every reading.

On the question proposed for discussion, I will say that it depends on each one separately as to which has the most influence, books or company, for some do not read any, hardly, and others do not take up the habits of their companions, nor have as many companions as others. My opinion is that the influence of each is in the exact proportion to the amount. For myself, I find that I unconsciously adopt the ideas and ways of my associates. I find that others do the same but never notice it. Therefore, I believe that each character is not only a combination of all ancestors, but also shows the influence of every one with whom they are brought in contact for any length of time. Books exert the same kind of influence that our associates exert, that is, by the sentiments they express, and the way they are expressed.

Terrell, Texas.

A MOSAIC.

GRACE LUNAR.

A keen little pang of sadness came into my heart as Mrs. Buchanan said poor Stella was dead. A link in the chain of the Household is broken, a chair is empty, a pen is still. But as we all gather together this Saturday morning, I imagine her sweet spirit hovering near us and is smiling lovingly at our efforts. I remember the sweet letter she wrote some time ago on "A Beautiful Face," in which she told so beautifully how a human heart can be mirrored in the face. What a dear, sweet letter in this issue (July 6th), and is it not sad when we know it is the last from her pen? I always enjoyed her letters, so clearly written. Then between the lines we could see plainly a sketch of a beautiful Christian life, pure and true.

Dear Mrs. Buchanan, you are right, the poor wife would have been far happier had she rebelled against the impositions of her master; but how weak some poor little women are! I believe in indulgence on both sides, but I also believe in the firmness to check it before it is too late.

Whew! Don't you all know Basil Lamont was out of breath and tired when he got through dreaming that dream? It was quite interesting; I really enjoyed it.

Edwina spoke of Ivanhoe and of the noble character of Rebecca. I liked it so much—a great deal better than Kenilworth, which is so sad. If I were an artist, I should paint Rebecca as she stood in the window in that great old tower, and with veil thrown back, revealing her beautiful features, she said to the Templar: "Remain where thou art, and if thou shalt diminish by one step the distance now between us, thou shalt see that the Jewish maiden will rather trust her soul with God than her honor to the Templar." What a brave noble woman she was, and yet the daughter of the despised Jew! How true what her old father said, that people speak of the bad persons of different nationalities, and yet they always say there are good ones; but when they speak of a bad Jew they always add: "He's just like all the rest." It does seem a little unfair.

Do any of the Household love art? I do, and am always drawing faces and things, but have never had the opportunity to cultivate my talent, if I possess any. I have always lived in the country, or in a little country town, and have never even seen any very fine pictures. Oh, how I did dream of the fine pictures which must have been shown at the World's Fair. How I did wish I could have seen them. I should have spent days and days gazing upon them.

Somebody asked who had read Miss Alcott's works. I have read a few. What pictures of real life they are. In Little Women I most liked Jo. She was so big-hearted and was just simply Jo. Meg was an example of an extremely nice young lady "groomed." Beth a real live little angel, and Amy a proud and affected little maid, yet none the less good and sweet when sounded deep. I love her books for young folks.

La Luna, you come near to having my name. I am sorry you have been in

poor health, and hope e're long you will be strong again. You must come often. Tell us about your baby; what dear little blessings they are. I think there is such a high seat in heaven for mothers.

What a sweet little poem Carroll Cone wrote to The Poor in Heart.

I shall have to say a good-bye to all, for fear of disgusting dear, patient Mrs. Buchanan, as well as numbers of others.

Terrell, Texas.

BREAD CAST ON THE WATERS.

MRS. JOHNSON.

Dear Mrs. Buchanan and Household Friends: I think of writing every week and have written two or three letters, but either mailed them in the top drawer or the safe, consequently they never reached their destination; but I can't resist the temptation to write any longer, for I want to tell the Household band how to can corn, as Mrs. Buchanan asked for a recipe in issue of June 29th. When we first were married we began taking TEXAS FARM AND RANCH, and pretty soon a lady wrote, telling how to can corn and all kinds of vegetables. My John and I tried her recipe, and find after three years experience, by following directions strictly, it is a decided success. It seems no one else noticed the recipe, or did not try it, so I will try and write back to the Household what I learned from the Household.

First, you must have new rubbers of a good quality; that is one of the main points. Cut corn from cob, place in jar as long as you can get any in, place on rubber and good top and screw down perfectly tight. Place in a kettle, with an old grain sack in the bottom, cover with water and bring to a boil and boil three hours.

Tomatoes may be served the same way. Beans, English peas, squashes or anything else needs water in them. After you pack in beans or anything else you may be canning in jars, pour in water until it runs over, and after as many of the bubbles rise as will, screw down the top and boil as directed for corn.

Now don't be like some of my neighbors—afraid the jars will burst and blow your head off, for they will not. I have never had but one jar to burst, and that was because it was resting on the kettle, so be sure and have the grain sack or hay between jars and the kettle.

For three winters we have had beans, peas, corn and squashes all winter that I canned myself. Two things more: Let jars cool in the water, and then wrap in paper and place in cool closet or cellar—we use a cellar. Sometimes a jar will spoil, but I don't think they will if the jars are perfectly air-tight.

If I succeed in helping the Household any, I will be glad, for I enjoy the letters from all the members so much, and especially the letters on books and their authors.

I would like so much to see Uncle Snort and Wandering Bachelor. Say, Uncle Snort, why don't you let Aunt Snort write once in a while too? But I expect she is too busy looking after those Shanghai-dominicker-yellow-legged-frizzling Games to write very often. I suppose that is the kind of chickens he raises; they are yellow-legged anyway. W. B. write often; I enjoy your letters so much. What has become of Allie Lindsay Lynch? She has not written in quite awhile.

But I know this is enough for a stranger, so will close with best wishes to all and especially our Mrs. Buchanan.

Wichita Falls, Texas.

RECIPES.

THOMASINE WALKER.

I have long wanted to ask the readers of the Household department if some of them would be kind enough to tell me what I can use in pickling an onion and a cucumber, or any kind of a vegetable, to retain its natural green color, so as to look like those you buy?

I once in last weeks paper that some one wanted a recipe for making pick, and as I am very successful with making it, will send them mine, hoping they will succeed as well. It may seem a little long, and look hard to them at first, but it isn't one bit of trouble. I usually make it while I get dinner, then put it away and warm for supper, as you know it is only good for supper. I also send the following recipe for ginger-snaps:

GINGER-SNAPS.

One-half cup of butter, one cup of sugar, one cup of molasses, one-half teaspoonful of soda, one tablespoonful of ginger, flour enough to make as stiff a dough as can be rolled out; bake in a

rather slow oven, as they are very easily burned.

CHILE.

Boil one teacup of chile beans with a small piece of fresh beef; one good sized onion cut up; let all cook together till well done, then in a small separate vessel boil two chile peppers, mash well and run through a sieve so as to keep seed and skin out, then put in a frying pan two tablespoonfuls of lard; when boiling hot add one tablespoonful of flour, let it brown well, then pour in the strained pepper, and if it seems too thick, why add a little hot water, cut your meat up as for hash, put it in, let all stew together awhile, add your beans, salt to your taste, and your chile is complete.

Dallas, Texas.

WHAT ST. ELMO TAUGHT ONE.

MARY R. OWNSBY.

Dear Household: I was delighted to see one of the Cellas sisters had written for the Household. I did not think many in the neighborhood took the paper. I have been lending mine to those whom I knew loved good literature.

As so many have expressed themselves in regard to St. Elmo, I cannot refrain from having my say. Twenty-one years ago, in May, I read the book. I have not seen it since and seldom heard it spoken of until the discussion in TEXAS FARM AND RANCH, which was very interesting to me, as I love debate. It calls people out and makes them think. Up to the time I read St. Elmo I had scarcely read anything but Biblical and ancient history, history of the world—Mrs. Mary G. Holme's novels. Reading the book gave me such thirst for knowledge, considering the limited time I have to call my own. I have read a great deal which I have not time or space to speak of. I love good literature. I frequently read with baby in lap; more frequently paper in one hand and churn in the other. I never regarded St. Elmo as anything but fiction intended for a lesson, which it conveyed to me, as I have since tried to gain all the knowledge and be as true a Christian as my limited ability would allow. One lady said it was strange a mother would be willing for a daughter to marry one who had been so wicked, though he had reformed.

If it were possible, I would make men amenable to the same moral standard as women. As we cannot rule society we should teach our daughters in society to give man no odds over her. Be always pure and sure of man's reform, for though he be as guilty as woman, society takes him back with outstretched arms, and if he marries the finest girl in the neighborhood, no stain is cast on his descendants; but alas, poor woman, if she deviates from the path of virtue "The sins of the parent is visited upon the children until the third and fourth generation."

Cellas, Texas.

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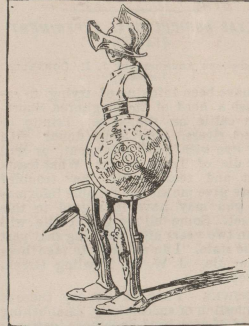
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FOR ALL PURPOSES.

Shipped knocked down, saves freight. The Best is Sure to Win and we have the best. Write us for catalogue.

American Steel Tank Co., HICKORY, IOWA.

LAKE CITY AUTOMATIC STOCK FOUNTAIN

Waters 50 to 150 Pigs Daily.



Governed by gravity weight valve. No springs to rust. No float to stick in the mud and let out tanks of water. Has built in drinking cup—a large, double drinking cup to hold a lot of hot, filthy water before a fresh supply comes down. Valve seat is in body of water and acts as a lock-nut. Can be set to water two pigs at once, and can be attached to a tank or barrel in ten minutes. Works successfully in winter. Retail price \$1. We pay express. Fountain sent to any address on trial. Price to be remitted by express agent if satisfactory. It costs nothing to try. Send for one. Agents wanted in every locality. Order through implement dealer or **STOCK FOUNTAIN CO.**, Lake City, Ia.

R. L. JENNINGS, Marshall, Texas.



2—The hero of to day.

Make Cows Pay.

Twenty cows and one **LITTLE GIANT** Separator will make more butter than 25 cows and no separator. Five cows will bring \$200 to \$300 and one separator will cost \$125. Five cows will eat a lot of feed; a separator eats nothing. Moral: Make the cow business pay by using a separator. Send for circulars. **P. M. SHARPLES**, Elgin, Ill.

further adds the following: Bitter sweet orange, various species of orange and lemon, prunus myrobolanus and prunus domestica (plum), black walnut, prunus armeniaca (apricot), prunus communis (almond), English walnut and several species of willow.

TREATMENT AND REMEDIES.

We noted last year the exceeding rapidity with which this parasite multiplies. If the soil be kept under perfectly clean cultivation, their most rapid increase will be checked. Refuse plants of the garden left standing after all the marketable products have been taken away, is a most vicious practice, and should be replaced with the habit of pulling up such growths and burning them, leaving the soil clear of all susceptible roots. Prof. Atkinson states that the most badly infested grape cuttings he ever saw were those grown very near diseased cabbages and tomatoes. The greatest care should be exercised with the cultivation of these plants, as also the Irish potato. The latter forms even a more prolific source of infection in some portions of Texas, where much of the seed for planting is imported and their origin is unknown to the purchaser. Texas gardeners and agriculturists should see to it that they grow their own seed potatoes on uninfected soil and keep clear of danger. If roots are ever used in making composts, great caution should be exercised, since non-infested soil may become infested in this way. The compost may be rendered innocuous by placing unslacked lime in layers with the infested refuse of plants used in the compost.

Great care must be used in the cultivation of perennials like the grape, peach or fig. The young trees should be gotten from sources known to be free from disease. The orchard should be kept free from infection by keeping up clean cultivation of non-susceptible crops, and the practice of cultivating susceptible garden crops between rows should be abolished. Young trees and seedlings are more seriously affected than older trees so far as the actual life of the tree is concerned, though productivity is greatly impaired.

To reclaim infested soil it is a common practice in Germany to give clean cultivation to a crop especially susceptible to the worm and colonizing them as it were. Then at the proper time plowing up that crop of infested roots and carefully gathering all the pieces and burning them. This is repeated several times and then given alternate cultivation to non-susceptible crops until it is found that the susceptible plants are sparingly infested. Each one interested must be governed by their own convenience in the matter of choosing a suitable trap crop from the list of badly infested and most susceptible plants already given.

Dr. Neal suggests growing in peas, cutting them when in bloom as a forage, then plowing out and gathering up the infested roots and burning. Rye was supposed to be non-susceptible, but though no injury was noted the first two years, the third year it was badly injured, illustrating, among other things, the fallacy of assuming cultivation of any given crop buckwheat and alfalfa have been grown in infested districts without injury for the first year, but experiments must determine how long this use will be advisable. It would probably be safe to alternate rye, alfalfa and buckwheat as a series of non-susceptible crops.

The use of alkaline fertilizers, such as hard wood ashes, muriate and sulphate of potash or kainit, produce a hard growth, less susceptible to attack. Relative to this Dr. Neal states that these fertilizers are used in too small quantities. Not less than 300 pounds to the acre should be used to produce the desired effect—one-half applied in December and the other in May. The application of vermicides has been found unsatisfactory and usually results have, however, probably developed from a too heroic effort to eradicate the disease at once. In view of the recent developments with respect to the fertilizing effect of carbon bisulphide it appears quite probable that by inserting weaker solutions into the ground as is usually done for the treatment of subterranean insects, great benefit will be derived in the following manner. The liquid will not be strong enough to affect the physiological functions of the plant except in a favorable and stimulating manner wholly compatible with the growth and recovery of the affected plant. At the same time it is strong enough to be an antidote to the further spread and propagation of the parasite, and will gradu-

ally eradicate it from the soil round about the trees and even the roots themselves.

By this method, however, two or three applications would need to be made, instead of only one, and the treatment might need to be extended over a period of two years instead of two months. This is probably better than making the treatment heroic enough to produce a dead orchard at the end of the two months.

The properties of bisulphide as a subterranean insecticide and fertilizer are further and more specially discussed in a separate paper, which will be presented to the society a little later.

With this duplicate discussion of the various host plants susceptible to the root rot and root gall diseases and the treatment in each case, enabling the individual either to guard against the cultivation of the susceptible host plants or beginning the eradication of the disease, it certainly is utter folly for any one to suffer loss and in the future should be left to suffer and pay the penalty of his bad management.

With regard to root tumor it must be stated that the scientific researches during the past year, so far as known, have developed no new facts further than were included in my former contribution to this society. No specific germ has been discovered and no additional remedial measures. No direct experiments have been made to test the possibility of the infection of healthy stock by buds from diseased trees, and the best that can be stated on that point is that all the evidence points in that direction and that as a matter of ordinary business we should avoid using buds of diseased trees in the propagation of our nursery stock. If this is avoided it matters little whether the disease is caused by a fungus or a horse fly, because we go out of danger's way.

There is no danger, however, in the transfer of buds taken from trees affected with root gall parasite since that intruder is a small animal which is confined to the roots of the trees and does not enter the circulation of the sap. The same applies to the root-rot disease, except that the parasite in this case is a fungus.

WORK OF THE COMMISSION.

The first and perhaps most important point settled by the inaugural paper upon these diseases was to convince all our nurserymen that it was folly to quibble about where the disease first came from and who was the responsible party for its introduction or distribution. It was recognized that the diseases were not peculiar to any given locality.

The next step was to admit that it was a serious matter for our nurserymen to send out trees in any way contaminated with these diseases, and the society passed resolutions to the effect that each one so doing should be condemned. The first thing accomplished, therefore, was the inauguration of a general house cleaning, and each one looked after the beam in his own eye, as it were. This work has been thoroughly done by our nurserymen with but few exceptions and those deserve punishment.

The general work of the commission since that time has been mostly advisory. Specimens of diseased roots have been sent freely to the chairman for examination. As a result of his determinations large quantities of nursery stock were in some instances voluntarily condemned by the interested parties and consigned to the brush pile and the flames. This is a most commendable spirit and those who have done so deserve the respect and confidence of all nurserymen and orchardists.

In a few instances specimens have been sent by orchardists who were planting trees. Upon giving them the desired information consignments of trees were refused and the nurserymen suffered loss both in pocket and patronage, a punishment which, in fact, is not only just, but lenient. The interested parties can thank the chairman of the commission for not having been widely published. Later, these nurserymen recognized their folly and mended their ways and it was thought best to give them another chance for their life.

From this it is apparent that a general work of eradication has been inaugurated all along the line and that both nurseryman and orchardist are putting their shoulders to the wheel. This is an important advance and one which ought to be gratifying for the first year's work.

Technically it has been found that the root tumor disease occasionally develops on pear roots. In the case of the propagation of pears upon quince it has been found to become quite serious in a

few instances. One report related to a plantation of blackberries which were utterly ruined by root tumor affections. Hence it will be advisable for all to keep these host plants in mind and be on the lookout.

Concerning root galls, it should be stated that this nematode parasite has become quite troublesome with the orchardists and nurserymen of Nebraska and California. From Nebraska come complaints to me at Hulen, Texas, have always pronounced judgment against Florida and Atlantic coast nurseries. Whether justly or not I am not in position to state. Great fear is also entertained with respect to the infested districts of California.

The Texas nurseryman and orchardist should, therefore, strain every effort to maintain the high standard of excellence which we are perfecting.

FRUIT REPORT FROM WEBSTER.

E. J. THOMAS.

In reply to your request in Orchard and Garden May 11th, '95, I send you a list of fruits which have proved a success here. I would have made a report sooner, but was waiting to see how our plums would pan out, as this is only the second year that some of them have fruited. The Kelsey is not a sure bearer, as it blooms too early; is liable to get clipped with a late frost. However it bears so young and profusely, such fine fruit that it ought to have a place in every orchard; bears about one year in three here.

A Fruit catalogue for Texas, placed in the hands of our Northern friends who are locating with us, would be one of the greatest goods the Horticultural Society can do. Our Northern settlers are planting out orchards of Northern fruit trees, which will not only prove to be a failure, but a great loss of time, labor and money.

The following list of fruits have proved a success in our locality:

Apples—Early Harvest, Red Astrachan, Red June, Ben Davis, and Transcendent Crab.

Peaches—Early Rivers, Tillotson, Honey, Pallas, and Onderdonk.

Pears—LeConte, Kieffer, Duchess and Bartlett.

Plums (Chickasaw)—Lone Star, Indian Chief, Wooten, and Golden Beauty.

Plums (Japan)—Burbank Sweet Botan, and Kelsey.

Figs—All do well with us; Celestial is our favorite.

Grapes—Black July, Herbmont, Brighton, Lady Washington, Niagara, Missouri R-ising and Brilliant, T. V. Munson's new.

Strawberries—Michel's Early, Neuman and Crescent. Michel's is our favorite market berry.

Blackberries and Dewberries—We have an abundance of wild ones that supply the market.

We have a large class of native Spanish peaches which do well here, and ripen July 15th to November. Our most profitable peaches are either Spanish or South Chinese race.

Cherries, raspberries and gooseberries are no good here.

Webster, Harris Co., Texas.

The Household Repairing Outfit sold by TEXAS FARM AND RANCH is needed in every home.

It is of No Use

to say that there is "Something Just as Good as Ripans Tabules for disorders of the stomach and liver." It is not so. This standard remedy will relieve and cure you. One tabule gives relief.

Ripans Tabules: Sold by druggists, or by mail if the price (50 cents a box) is sent to The Ripans Chemical Company, No. 10 Spruce St., New York. Sample vial 10 cents.

BRIAR PIPE GIVEN AWAY



WITH EVERY ONE POUND OF DUKES MIXTURE for 35 cents Every pipe stamped DUKES MIXTURE or 2 oz. PACKAGES 5¢

A BARGAIN.

Ten-acre fruit farm at Webster, all in cultivation. Orchard of 500 two-year-old pear trees and other fruits. Good house, etc. Price \$600. O. L. TINKER, Webster, Texas.

Sherman Nurseries.

THE BEST of EVERYTHING for the Orchard, The Best Yard, Cemetery, Park, etc. New catalogue. Attractive prices. Express paid to your door. Write JOHN S. KERR, Sherman, Texas.

CRIMSON CLOVER Send your address on a postal and get the most complete instructions ever printed. Tells what seed is hardy. How to succeed in dry weather. Tells everything you want to know. J. A. EVERITT, Seedman, Indianapolis, Ind.

AUSTIN NURSERY.

15 years experience on this black land. Everything tested. No dross in the orchards we select. Large stock. Prices reduced. Catalogue free. Fortunes in our Texas varieties. We pay express. RAMSEY & SON, Austin, Texas.

FRUIT EVAPORATORS and CIDER MILLS.

BEST, CHEAPEST and most reliable on the market. Catalogue free. WM. STAHL EVAPORATOR CO., QUINCY, ILL.

Bunch Yams.

Simon Pure. The Best Sweet Potato. Plants by mail or express, 100 for 50 cts., \$5.50 per 1000. Orders booked now. Get our new 88-page illustrated catalogue of Pure-bred Poultry and Eggs. Its free. Name this paper, please. Address H. B. GREER, Nashville, Tenn. Or, GREER BROS., St. Marys, Mo.

Galveston Nursery & Orchard Co.,

HULEN, TEXAS.

SPECIALTIES: Pears, plums and peaches especially selected for the Gulf Coast. Also surplus of general line of fruit trees and ornamentals on propagation contracts taken for dealers.

FREDERICK W. MALLY, Manager.

NEW CROP

Turnip Seeds, Rye, Triumph Potatoes, Crimson Clover, Sorghum & June Corn. Stock Peas.

German Millet. Write for prices. TEXAS SEED & FLORAL CO., 806 Elm street, Dallas, Texas.

McKinney Nurseries.

SEND FOR OUR NEW LIST,

Telling WHAT TO PLANT and WHERE TO PLANT IT, AND HOW TO HAVE

Fruit, and Plenty of It, In Any Part of Texas.

E. W. KIRKPATRICK, McKinney, Texas.



STEEL WEB PICKET LAWN FENCE, Steel Posts, Steel Rails and Steel Wire. Flower and Tomato Guards; Cabled Field and Hog Fence; Steel Wire Fence Board, etc. Catalogue free. DeKALB FENCE CO., 88 Eighth St., DeKalb, Ill.

A GOOD REMEDY for despondency can not be found in drug stores, nor will the trouble yield to the treatment of the most skilled physicians in the land. **FOR THE BLUES** you must take something out of the regular line—something that will refresh the mind and take it off of the sordid and cankerous cares of business. The great humorous and industrial journal, the **TEXAS SANDWICH**, will do it in every case. Send 25 cents in 2-cent stamps for two months trial. Dallas.

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TEXAS

TO THE WORLD!

The greatest commonwealth in the universe, whose soil teems with the products of the mar, and whose laws, constructed for the advancement of man, throw wide open its gates to the

People of the United States
and bids them enter for the purpose of investment and settlement.

Capital and Labor
alike have equal advantages and thrive under a good and just government, controlling the richest section in the world.

TEXAS IN 1893

produced for home and foreign consumption,

1,848,333 bales of cotton,
3,424,441 bushels of corn,
24,595,169 bushels of oats,
6,553,575 bushels of wheat.

and made a correspondingly large record in the production of other staples. The **PRESENT** **TEXAS** is the most successful in its history and far exceeds the figures above.

This great State is reached direct from St. Louis, Cairo and Memphis by the

IRON MOUNTAIN ROUTE,

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4-DAILY TRAINS--4

FROM ST. LOUIS,

And Double Daily Service from Cairo and Memphis.

For full particulars concerning Texas and for copy of pamphlet setting forth the wonderful achievements of its soil, address

H. C. TOWNSEND,
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St. Louis, Mo.

OUR CLUBBING LIST.

We will send **TEXAS FARM AND RANCH** and any one of the following publications, one year at the very low rate given below. No paper will be sent at less than publisher's full price unless taken in connection with **TEXAS FARM AND RANCH**. The price of **TEXAS FARM AND RANCH** is One Dollar a year.

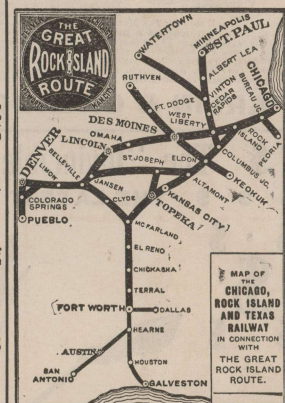
	Regular With T.	price. F. & R.
Atlanta Constitution, weekly.....	1 00	\$1 75
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Creamery Gazette, semi-monthly.....	1 00	1 50
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St. Louis Globe-Democrat, w'ly.....	1 00	1 75
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\$20

Will pay for the Farm and Ranch Sewing Machine and all attachments and **TEXAS FARM AND RANCH** for one year. The machines are fully guaranteed, and can be returned at our expense if not satisfactory. If you want to know more about these machines, read the advertisement on page 19. Address all orders to

TEXAS FARM AND RANCH,
Dallas, Texas.



This map shows a modern "up-to-date" railroad, and how it has its own lines to the principal large cities of the West. It is the

"GREAT ROCK ISLAND ROUTE,"
And has double daily fast express train service from Texas as follows:

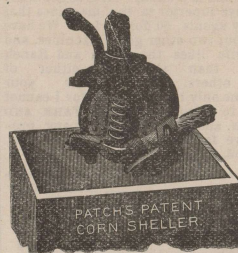
No. 4 Lv. Fort Worth.....	10:40 a. m.
Ar. Kansas City.....	8:20 next a. m.
No. 2 Lv. Fort Worth.....	8:10 p. m.
Ar. Kansas City.....	5:25 p. m.
Ar. Chicago.....	9:25 next a. m.
Ar. Denver.....	7:25 a. m.

Through Pullman Sleepers and Free Reclining Chair Cars.
Don't overlook the fact that Train No. 2 saves you a whole business day en route to Denver or Colorado Springs.

Your local ticket agent will probably want to sell you a ticket via the Rock Island, but if he don't—insist until he does.

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SHELL OUT!



Address **TEXAS FARM AND RANCH**, DALLAS, TEXAS.

Not a toy, but a machine which does the work, and all a farmer needs for shelling corn for home use.

IT WON'T CHOKE.
SIMPLE IN CONSTRUCTION.
IT IS DURABLE AND CHEAP.

We will furnish this Sheller and **TEXAS FARM AND RANCH** one year for \$3.25, or we will send it f. o. b. Dallas for \$3 cash.

I should have acknowledged receipt of the Corn Sheller and Bone Mill purchased from you some time ago. It came all o. k. I have thoroughly tested both, and if I could not get others like them, I would not take one hundred dollars for them. Every poultry fancier ought to own a Bone Mill. I grind all the corn my stock eats. And the Sheller—it is a perfect dandy. Can easily shell a bushel of corn in five minutes.—J. C. COLLINS, Belton, Texas.

Something Needed in Every Home

The Best Coffee Mill in the Market.



This mill holds one pound of roasted coffee, which can be ground out in quantities desired as needed. Air tight canister with screw cap top.

Hardwood box, rounded corners, finely finished with three coats of varnish.

Mountings, copper bronzed and lacquered.

The advantages—convenience, rapid and easy grinders—commend this mill as in every way superior to the old style ones.

We will send this mill (purchaser pays express charges) and **TEXAS FARM AND RANCH** one year for \$1.50. Or we will send the mill alone for 75 cents.

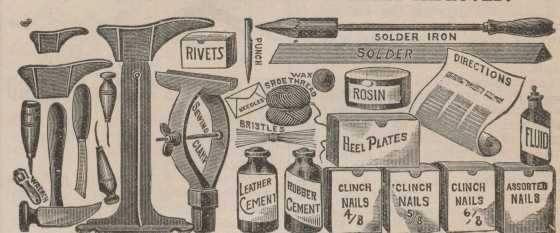
From the above brief description and the illustration you get a fair idea of the mill. Every family needs and should have one. Address all orders to

TEXAS FARM AND RANCH, Dallas, Texas.

New Iron Lasts

Home Repairing Outfit.

ENLARGED, REMODELED AND GREATLY IMPROVED.



Consisting of 28 First-Class Tools and Materials shown in cut, viz:

1 Iron Last, 10 inches; 1 Iron Last, 8 inches; 1 Iron Last, 6 inches; 1 Iron Standard with Base; 1 package Assorted Nails; 1 package 4-8 Wire Clinch Nails; 1 package 5-8 Wire Clinch Nails; 1 package 6-8 Wire Clinch Nails; 1/2 dozen pairs Star Heel Plates; 1/2 pound Copper Rivets and Burrs; 1 Steel Punch; 1 Sewing Awl, complete; 1 Pegging Awl; 1 Wrench for above; 1 Stabbing Awl, complete; 1 Shoe Knife; 1 Shoe Hammer; 1 bottle Rubber Cement; 1 bottle Leather Cement; 1 ball Wax; 1 ball Shoe Thread; 1 bunch Bristles; 1 Harness and Saw Clamp; 4 Harness Needles; 1 Soldering-Iron; 1 bottle Soldering Fluid; 1 box Rosin; 1 bar Solder; Directions for using.

All these Tools are

PRACTICAL, NEAT and CHEAP,

Not mere toys, enabling any person to do his own

HALF SOLING, BOOT, SHOE, RUBBER, HARNESS and TINWARE REPAIRING.

These Tools, when purchased separately at a hardware store would cost over \$6.00.

The only COMPLETE OUTFIT on the market.

We furnish the Tools mentioned above, complete, weight 18 pounds, or \$3.00. **TEXAS FARM AND RANCH** one year and the complete set of Tools for \$3 75.

Address **TEXAS FARM AND RANCH**, DALLAS, TEXAS.

Farm Machinery.

PATENTS GRANTED TO CITIZENS OF TEXAS

For week ending June 25th, 1895, reported through the office of J. S. Beale, solicitor of patents, 606 F Street, N. W., Washington, D. C.:

Malcomb Scougaile, Fort Worth; card fastener for envelopes.

James P Taylor, Fort Worth; trolley sander.

Edw. Alexander, El Paso; medicine (trade mark).

Charles L. Beasnette, Waco; roller cotton press.

Frank Comings, San Antonio; nut lock.

W. H. Hammer, Fairlie; fumigator for insects.

M. G. Knight, Oak Cliff; mail bag.

James M. Patterson, Springtown; insulator.

W. H. Shanley, Granbury; kitchen cabinet.

W. B. Taylor and J. H. Smith, as-signees, Dallas; vending and money changing machine.

PATENT SPECIFICATIONS.

Rural Mechanic.

When you take out patent's be sure that your specifications are first-class and that they cover the matter completely. Frequently a carelessly drawn or imperfectly worded specification has cost the inventor the result of his labor. In the case of Corlies and Sickles this is particularly true. Sickles undoubtedly invented the first automatic out-off valve. He applied it only to puppet valves, but intended to have his specifications broad enough to cover the application to all valves. He failed in this, however, and George H. Corlies seized upon the principle of Sickles' invention, successfully applied it to another form of engine and then maintained his position in court, in spite of all that Sickles could do. Had this gentleman more carefully worded his patent specifications, Mr. Corlies would undoubtedly have a different record than he now possesses in his pose as the benefactor of steam engineering.

FROM THE PILE TO THE SACK.

The Marseilles Adams Shuck-Sheller is the implement that does the business. While fully adapted for general uses throughout the corn growing sections for shelling corn that has been shucked, it is more especially adapted to those sections where, through custom or necessity, corn is gathered with the husk in part or wholly left on. The advantages of a successful shuck sheller are that snapping the ears from the stalk unhusked, instead of husking each ear as picked, effects a decided saving in time and expense of harvesting corn. The corn can be thrown in piles on high ground, thus dispensing with the cost of cribbing. The husks give greater protection from weevils, rats, etc., and in many localities the husk is a valuable marketable product. The advantage to a purchaser of a shuck sheller is, he can shell husked corn equal or superior to the work of any other sheller, and in addition thereto, can do perfect work in shelling unhusked or snapped corn, which other shellers cannot do. Owing to the extreme difficulty of separation of the husks and cobs from the shelled corn, there are but one or two makes of corn shellers that will solicit this class of sheller trade, or attempt to shell unhusked corn, and even those shellers are very wasteful, crack the kernels of corn and break the cobs, which this machine does not do. In effectiveness of separation of the shelled corn from the cobs and husks and its ability to save all the corn, it is claimed for this sheller that it has no equal. The shuck sheller is made in two-hole, four-hole and six-hole sizes.

These machines have been sold in Texas about ten years, and as far as we can learn have given perfect satisfaction, and the manufacturers are now shipping a large number into the State to help care for our immense corn crop. The manufacturers have been represented by the Keating I. & M. Co., of Dallas, Tex., from the beginning of this trade, who will give any information desired about this great labor saving contrivance.

PAINT.

Mr. Hunter.

¶ We have [had] many inquiries as to which is the best paint, and have had circulars sent us of this and that "ready

mixed" paint, with the inquiry as to whether we thought them good, etc. In talking with men of experience and good judgment in such matters, we have come to believe that pure lead and pure linseed oil makes the very best paint, and that the many kinds of "ready mixed" paints are more or less adulterated with cheap materials, or mixed with cheap (fish?) oil. Discussing paint with a couple of poultrymen a few days ago, one said, "I have used three different kinds, and neither one of them was worth the time and brush wear to put them on. I am done with cheap paints." "That is just my fix," said number two; "I haven't used three different makes, but I painted one building twice within three years with a mixed paint the dealer said was 'just as good,' and cheaper, and it washed off like fun in every shower. The next time I paint it will be with lead and linseed oil, and then I'll know what I've got!"

This is very much the writer's experience. Becoming acquainted in a business way with a paint manufacturer some years ago we listened confidently to his eloquent representations of the merit of a particular brand of his paint, and when we had buildings to paint went to his company and bought the brand he extolled so highly. The old gentleman is some years dead, and the company some time ago failed, and the business was wound up—so we are injuring no one in saying the paint we so confidently invested in is "N. G." and the money paid for it was, practically, thrown away.

We also have decided that hereafter we will use lead and oil only. Talking with Mr. Andrus, who recently visited several Massachusetts poultry farms in the interest of some government schools in the Province of Quebec, he said there was no doubt in his mind that lead and oil was by all odds the best and cheapest paint, and he said, "If you tell your readers to use raw linseed oil for all outside work they will find that it makes a harder and more lasting surface. Raw oil takes some longer to dry, but that is of no consequence on outside work and it wears splendidly."

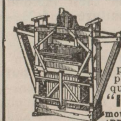
We visited Latham a few days ago, to talk "scratching-shed" houses, etc., and, incidentally the subject of paint came up. "There is no doubt in my mind," said he, "that lead and oil is the stuff to wear, and for outside work if 20 to 25 per cent of cheap flour or fancy middlings, or 'Red Dog' is mixed into the paint it will dry into a splendid hard metallic surface, that will wear like iron." This we had never heard of before, but he said he had seen it tested and proved that there was something in the gluten of the flour or middlings that, combining with the lead and oil made that "hard" surface so desirable in outside work. This is important, if true, as the addition of that quantity of flour (or fancy middlings) would somewhat reduce the cost of the paint at the same time we are getting the "hard" surface.

If the united testimony of these experienced men is to be relied upon, lead and linseed oil would seem to be the paint for us to use. The question would come up, "what lead?" and we have, fortunately, the answer of the associated manufacturers called the National Lead Co., which gives the brands of twenty-two manufacturers which are guaranteed to be pure white lead. We do not say that other makes of lead are adulterated, but we do believe these brands of lead are pure lead, hence we shall look out to get a reliable make when we are buying. With the "tinting colors," which they also manufacture, any desired shade (or tint) can be made—and we shall then be certain that we have got "the best."

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Ten-horse power
Portable
on skids. Low price.
Hartwell Iron Works, Houston, Texas.

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State rights or whole patent. Best movement and easiest operated rake in the world, and can be manufactured as cheap as any first-class rake on the market. Address GEORGE B. RISLEY, Rocky Hill, Conn.



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Fort Worth, Texas.

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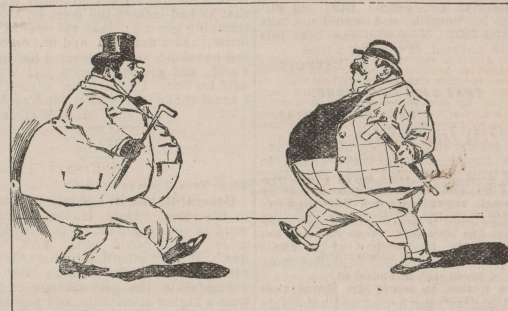
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LAWRENCE, KANSAS.



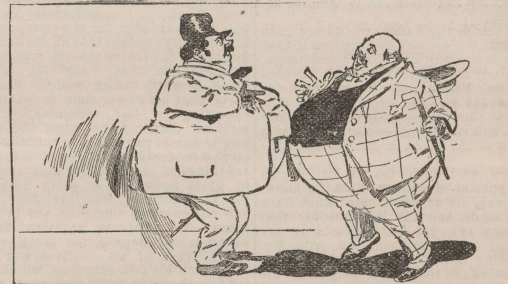
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2—and to their embarrassment find it impossible to shake hands, so

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3—they kissed instead.

gation in the Arkansas Valley and has made Garden City the center of a country of garden farms. The use of this system has been and is being successfully developed, and is proving reliable wherever the water in sufficient quantities lies within less than 40 to 60 feet of the surface, and, after looking over what has been done here, I am convinced that it can be made available safely to irrigate land enough to support a man and his family in comfort, even when water has to be raised one hundred feet. Of course the wind mill will need to be larger, and the well and pump more expensive, the deeper the water is below the surface.

Now, as to the method in use here. The reservoir is the heart of the whole system. This reservoir must be large, as the water must be accumulated in quantity to allow of a volume to be turned into the irrigating ditches sufficient to push the water forward through the ditches and over the land. The water running from even the largest wind mill pump would not be sufficient to irrigate practically any considerable distance from the pump. It would all be taken up by the ground near by while that at a distance would get none. Hence, large reservoirs are made, building the banks of earth four to five feet in height. They are usually from

furnished with all information if they cannot afford the time to go and see for themselves.

Now as to results. I wish that every TEXAS FARM AND RANCH reader who is so situated that he can provide himself with an irrigation plant, could come to this Garden City country and see what has been, and is being accomplished with this method of irrigation. I am sure he would at once see and acknowledge its practicability, and would set as an object to be attained the owning of a like plant. Remember that the picture of Mr. Frost's place (No. 1) shows a comparatively new plant, put up last season. The picture of Mr. Richter's mills and reservoir (No. 2) shows one of the older outfits, and also shows what even a few years of irrigation will do. Illustrations Nos. 3, 4 and 5 show something of the products of the soil which each season will surely bring to irrigated lands.

I first visited the farm of Mr. D. M. Frost, President of the State Board of Irrigation. Mr. Frost has a reservoir 100 by 120, has one modern mill, 12 feet, driving a 10 inch pump, and also one of the home-made Jumbo mills, driving two 6 inch pumps, all pumping into the reservoir. He handles successfully 25 acres farmed to fruits, alfalfa and vegetables. Mr. Frost says of the place

not think it was ever patented, but from his experience he would not advise any one to build one as a measure of economy. Further of this wheel, Mr. Cowhich, who introduced it into this part of Kansas, says that, built strong enough to stand the hard winds, it is a very fair wheel, but when it is so built, it costs more than a standard modern wheel, which is capable of pumping much more water, and that really he could not advise any one to invest his money in building one when so many good standard wheels are on the market from which to choose.

From Mr. Frost's place we went to Mr. B. Doty's place. Mr. Doty handles 40 acres with two outfits, reservoirs 100 feet square, 5 feet deep, 12 foot mills, pumps 10 inches in diameter. Mr. Doty began five years ago, going in debt for his first outfit; cost of improvements was paid out of the first crop on 10 acres. He has added improvements each year, paying for all as he went along. Last year he put by some \$1700, so I understood. Weather does not worry him at all. The wind is sure, and the wind pumps the water, which insures the crop.

Mr. Doty raises all the fish his family can use in his ponds.

We next went to Mr. A. S. Parson's place. He has 10 acres in orchard and

be made to understand what a dreary thing it is when a man feels himself going down a precipice with open eyes and passive will; to see his destruction and not have the power of will to stay it, and yet to feel it all the way emanating from himself; to perceive all goodness emptied out of him, and yet not be able to forget the time when it was otherwise, how he would avoid the first temptation to drink!

TRANSFERS OF JERSEY CATTLE.

The following is a list of Texas transfers of Jersey cattle for the week ending July 9, 1895, taken from report of the Secretary A. J. C. C.

BULLS.

Alec Pedro 40397—L Day to W O Young, Brandon.
Ol Breck 36829—O W Tandy to J E Cabaniss, Cane Island.

COWS AND HEIFERS.

Algira 104718—W B Montgomery to W J Spencer & Co, Fort Worth.
Amoretta M 104736—W B Montgomery to W J Spencer & Co, Fort Worth.
Bama Gist 105471—L P Gist to W J Rutledge, Whitewright.
Bernice M 104716—W B Montgomery to W J Spencer & Co, Fort Worth.
Champion M Flower 104982—W B



80 to 125 feet square. The earth from the inside of the reservoir for a foot or eighteen inches in depth is taken out and used in building the banks. An outlet through the bank is built of plank at about the level of the surface of the ground thus providing to drain the water from the inside all but about one foot or so, which must always remain to keep the bottom from drying up and developing leaks. This outlet opens into the conducting ditch outside the reservoir bank. The reservoir end is fitted with a gate for the purpose of gauging the volume of water delivered to the ditch.

The reservoir once built, one to two wells are put down outside its walls, these wells fitted with large pumps and with suitable wind mills for operating them. Such an outfit comprises the wind mill irrigation plant which is transforming the Arkansas Valley at this point into beautiful homes.

These plants irrigate successfully, eight, fifteen, twenty-five and even as many as forty acres to a single outfit, varying according to size of mills and pumps. The view given of the irrigation outfit belonging to Mr. D. M. Frost, of Garden City, will convey a good idea of the appearance of one of these irrigating outfits.

Space will not admit of a full and detailed description of making these reservoirs tight, and all the detail of construction. Any who may contemplate making these improvements must be

that he turned off over \$2000 worth of products from it last year, that he regarded it worth more than any unfarmed 300 acres in West Kansas, that it was fully demonstrated that a windmill and pump outfit would irrigate land enough to give a family a good living, and to furnish a surplus each year to put in bank or at interest.

I was interested in the Jumbo pumping mill, as I had read of it that any farmer could build one cheaply, and that it was a world beater for pumping water. Seeing that Mr. Frost had one, I asked him for his experience. Here a description of the Jumbo mill is in order. Imagine a 10x14 cow shed without a roof, the walls of the shed 9 feet high, across the plates a shaft with crank on both ends, on the shaft a wheel built like the paddle wheel of an old stern wheel boat, one-half the wheel extending down into the shed, the other half projecting out where the roof should be, the pumps attached to the cranks on either side of the shed, the affair setting east and west, so that the north or the south wind may catch the sails squarely, and any but a due east or west wind would catch the sails so as to drive the wheel. Now, Mr. Frost says that the wheel does not run in winds that do good work with his 12 foot modern wheel, that in good winds it pumps very well, in high winds it runs too fast, and if the wind is very high the floats blow or fly off, and the arms break and the wheel has to be rebuilt after a hard storm. That he does

garden, raises onions, celery fruits potatoes, etc., last year raised at the rate of 1400 bushels of onions per acre. Mr. Parson's house is in a beautiful cozy spot, surrounded by fruit and shade trees, just such a one as must make a man contented. His first wind mill is almost hidden by the trees which have been watered by its means, and Mr. Parsons says that this fall he will be obliged to put up a mill on a 60 foot tower to get it above the trees and into the wind.

Mr. E. J. Johnson has three reservoirs, one 8 foot and one 10 foot mill, one 5 inch and one 8 inch pump, handles 6, and says he could handle 10 acres in general gardening. Considers his 6 acres, with its wind mills and irrigation outfits superior to any man's large dry farm. He has a pretty home, says he manages to provide for his family, pay his taxes, keep out of debt and put aside \$300 to \$500 per year to say nothing of the increasing value of his place.

Mr. I. C. Allen has a reservoir 100x100 with mills and pumps. Has been in use four years. Handles 15 acres, orchard, garden, alfalfa, etc. He has a most magnificent orchard.

[CONTINUED NEXT ISSUE.]

Charles Lamb, one of the brightest spirits ever extinguished by drink, wrote mournfully, looking back upon his childhood: "Could the youth to whom the flavor of the first glass was delicious, look into my desolation and

Montgomery to W J Spencer & Co, Fort Worth.

Arminda N 104811—W B Montgomery to W J Spencer & Co, Fort Worth.

Gilt Edge Berneta 104714—Gilt Edge Regie 104813—W B Montgomery to W J Spencer & Co, Fort Worth.

Mhoon Princess 105673—W D Montgomery to N P Anderson, Fort Worth.

Minnie Elgin 101361—T F Bell to B S Wettermark, Nacogdoches.

Mittie Mitchell 82763—J F Gist to W J Rutledge, Whitewright.

Our Chloe 83559—B M Mace to W Jones, Waco.

Queen Myra 105961—T F Bell to B S Wettermark, Nacogdoches.

Sadie Tormentor 24 83550—B M Mace to W Jones, Waco.

Halbert's Beauty 96443—W B Montgomery to W D Spencer & Co, Fort Worth.

Janie Caruth 73311—D J Anthony to Terrell & Harris, Terrell.

Janie Caruth 73311—Terrell & Harris to W S Newcom, Terrell.

Janie Torment 24 83558—B M Mace to W Jones, Waco.

Marie's Girl 100541—T A Low to J E Williams, Brenham.

Mattie Bell of Luling 91464—W Bell to Mrs M A Lawrence, Luling.

Mattie Welcome Pogis 24 83557—B M Mace to W Jones, Waco.

May Winkle 83589—J N McKenzie to W Jones, Waco.

Tona Koffee of Lawn 403485—Platter & Loster to J S Terry, Hillsboro.

number of listeners from different parts of the State of Colorado were present to hear the discussion of How to Irrigate Properly, How to Maintain Soil Fertility, How to Control Destructive Insects, and other similar questions of importance. The reports of the meetings will be published by the Department of Agriculture at Washington, and distributed from the Bureau of Experiment Stations, of which Director A. C. True is in charge. These discussions should come into the hands of all who are interested in the development of our system of industrial education in the State. Upon the whole, when the facts are known, the people of the country are to be congratulated on the evident progress which is being made by the A. & M. Colleges and Experiment Stations, and should hold themselves in readiness to advise and assist these institutions from time to time as opportunity offers. A fair investigation of their work, their difficulties, and what they have accomplished always makes for their friends.

PROF. J. H. CONNELL.

ALL-VINE POTATOES.

SEYMOUR, TEXAS.

Editor Texas Farm and Ranch:

In reply to Lee Burrow, Owlett, Arkansas, I will say this: From fall crop potatoes this hardly happens. If out to one eye, a Peerless potato if from true seed will never fall to make a fair crop, but it often happens that grocery men will have seed called Peerless, but are nothing more than some northern grown late potato seed, which will generally grow into vines, and nothing more; so we have this advantage in raising a fall crop, if the fall crop does well, and the spring crop will if the weather is favorable and planting and cultivating is done right. Friend Lee, try the Freeman in place of Peerless. The Triumph and Freeman are my leading crops. They are both fine.

Weather fine now; corn crops will be enormous, but oats and wheat sprouting in shocks. Cotton backward; too much rain.

MICHAEL HILTI.

PROUD, BUT NOT NAUGHTY.

MANOR, TEXAS.

Editor Texas Farm and Ranch:

Seeing my last letter in print in your, or our, valuable paper, encouraged me to come again. I tell you I felt mighty big to see my first letter in print. I was beginning to think I was in the wrong business, and ought to edit a paper somewhere, but was not sure if I could use enough big words without getting some of my country slang in it, and then it sprang up before me how they sometimes abuse the poor editor, and beat him out of his hard earned money. All the same I stand about a foot higher in my wife's estimation since she saw my letter in a big paper like TEXAS FARM AND RANCH. I sent the letter in without her knowledge, and when the paper came, she commenced reading the letter, and made the remark: "Here seems to be another smart man like Uncle Snort, writing in TEXAS FARM AND RANCH." I tell you this made me feel big, and think I ought to wear a stovepipe hat; will wait, though, until after next election; think there will be some poor defeated candidate that will be ashamed to wear his, and give it to me.

I wish Uncle Snort would quit writing so much about how his better half is making him trot about. I am already feeling the effects of his writing. His letter is generally the first thing my wife reads, and I am getting very uneasy about it.

My June corn is like Uncle Snort's—is growing into fishing poles. I measured one stalk, and it measured twelve feet, and had no tassel at that. I think it gets ears on it according to the stalk, I will have to contract for a log wagon to haul it in. It is fixing to shoot now, and I am real scared to go about it.

I see in a previous number about how to treat tomatoes to make them bear. I think it was written by E. B. Blackman, in Western Garden. Would say that his method is entirely too much trouble for a Texas farmer, when he can raise them without going to all of that trouble. I have planted the Dwarf Champion tomato in rows three feet apart, and two feet in the row; plowed them three times, and have had all the tomatoes we could use, and gave about five bushels to my neighbors. They began to ripen three weeks ago, and are still blooming, with ripe and half grown tomatoes on them. I find that they grow one stalk and stand erect, while other varieties grow very rank and lay on the ground

and rot. My land is heavy black land. I have seen my neighbors plant other varieties, and they grow nicely and bloom, but have had no tomatoes so far. I see an inquiry by Mr. R. J. Sledge, of Waller, Texas, about how to raise the Russian sunflower. Will give him my way: I planted my first on the 12th of March, in rows three feet apart, and four feet in the row, and made fine large sunflowers, while those I planted four or five weeks later, did not grow half as large, having the same chance. I have had splendid success with the Triumph potato, while my neighbors did not make any potatoes from their Early Rose.

Would some kind reader give me a good way to poison cotton worms? I have a spraying pump, but do not know which poison is best, nor how to use it. I think it would benefit a good many readers if someone would give a good method.

FRANK O. HANKE.

ABOUT ONIONS.

NEW WAVELEY, TEXAS.

Editor Texas Farm and Ranch:

An old subscriber takes the liberty of asking information regarding raising onions for market, where to market, and every item you can give in their cultivation. I am convenient to three good towns, by railway. I have read all that has appeared in TEXAS FARM AND RANCH on the subject, but am somewhat confused in my mind, as to the best time of planting onion seed. Prof. Price, in TEXAS FARM AND RANCH February 9th says, early in February is the time for sowing seed for spring crop. If I am not much mistaken the veteran editor of TEXAS FARM AND RANCH says, sow in September, or early fall. Now kindly tell me when to sow, as I would like to have something growing as soon as possible, to reconcile me to the almost entire failure of vegetables and melons this season, on account of the continuous rains.

I have a plot of ground in an old pear orchard where a good many trees have died, on which a most luxuriant crop of bur clover has come up and died down for four years. Will this ground do to set in fruit trees?

I presume American Gardening is the best guide for Texas gardeners, or it would not have a place in your clubbing list.

SUBSCRIBER.

[As early in spring as the ground can be made ready is the time to plant onion seed. Fall planting is for sets to be transplanted the next spring. Ground should be made very rich with barnyard and poultry manure and wood ashes, and worked deep and thoroughly, and then rolled. Seed should be sown in shallow drills, and the soil firmly pressed over them. Prize Taker, Yellow Danvers, Giant of Rocca, are good varieties to plant. Would not plant pear or apple where pear trees and clover die.—Ed.]

SHORT CORRESPONDENCE.

Am well pleased with the sewing machine bought of you. There is none better.—B. F. CHAMBERS, Alder Branch, Texas.

TEXAS FARM AND RANCH: The information derived from the practical farmers who write in your columns is worth many times the subscription price.—BENJ. KING Beauregard, Miss.

I received that corn sheller in due time, but had no time to use it till last week. It is extra good. I think I can sell some more for as soon as the people get some money. I will get one of your mills as soon as I can.—JACOB VOELKE, Ethel, Texas.

AGRICULTURAL GAMBLING.

Western Live Stock Journal.

The spirit of gambling has become so rampant that most of the states have taken action to prohibit the gambling at horse races, which has ruined so many young men. Farmers' sons as well as city people become fascinated, and ruin is inevitable. Thus the noble horse has been degraded to a mere gambling tool. The book makers in this state, barred out from the race track, besought to attach themselves to the bicycle racing, but the wheelmen would not permit the degradation of gamblers to enter their ranks or permit themselves to be used for gambling.

Grain gamblers, too, are abroad in the land, and many country people think they can make more money on the Board of Trade wheat than by raising it the old way. The postoffice authorities have excluded some of these grain gam-

blers in Chicago from the mails, and the grand juries are indicting the bucket shavers that are duping the people in every country town. Men eager to win on the Board of Trade put up for margins their savings of years, or mortgage the farm or home in the vain hope of winning on the Board of Trade. They are beguiled with profits at first, then all is soon lost.

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This book is written specially for Texas, by A. H. Andrae, and is complete every way, giving best varieties adapted to this state, cutting, pruning, grafting, planting, diseases, insects, etc. The second part gives practical instructions for gathering grapes, wine and how to make it, vessels, washing and pressing, white wine, red wine, etc. We are making a special offer of this book at 25 cents postpaid, or will give one copy free to anyone sending us one new yearly subscriber at \$1.00.

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Facilities for feed, water and rest in transit are provided at San Antonio, Taylor, Palestine, Longview, Texarkana, Little Rock, Poplar Bluff, Cairo and St. Louis.

For further information call on nearest agent or address, J. E. GALBRAITH, G. F. & P. A., D. J. PRICE, A. G. P. A., Palestine, Texas.

AN INNOVATION.

Excellent Facilities Now Offered by the Iron Mountain Route, to Travelers En Route to the North and East.

With the change of time on the Iron Mountain Route, effective June 30, residents of Texas have been put in the closest possible communication with Memphis, St. Louis, Chicago, Cincinnati, Philadelphia, Boston, New York and the Atlantic seaboard. The most notable worthy feature inaugurated is that of train No. 54. This is known as the "Texas-New York Flyer", carrying as it does, through Pullman buffet sleeping car from El Paso, Ft. Worth, Dallas and way points to Little Rock and St. Louis, where direct connections are made with the Vandalia fast train for New York, and mid-night special over the Chicago & Alton R. R. for Chicago.

Leave Texarkana 4:10 a. m., arrive St. Louis 10:05 p. m., arrive Chicago 8:00 a. m. next morning, New York 7:43 second morning out. A double daily line of through Pullman buffet sleeping cars is also operated between Galveston and St. Louis, via International & Great Northern one line, and Gulf Colorado & Santa Fe and Houston & Texas Central the other line. Day coaches are also run between Ft. Worth, Dallas, Texarkana and Memphis, arriving at the Mississippi River gate-way at 4:30 p. m. This in addition to the old established service between Laredo and San Antonio gives Texas the best outlet to the North it has ever known.

Mr. Jno. C. Lewis, Traveling Passenger Agent of the Iron Mountain Route, Austin, Texas, is very enthusiastic over the new card and reports a most encouraging travel, particularly on No. 54, the fast "Texas-New York Flyer", which has been so extensively advertised.

CUTION—Buy only Dr. Isaac Thompson's Eye Water. Carefully examine wrapper. None other genuine.

LUCKY PIN.

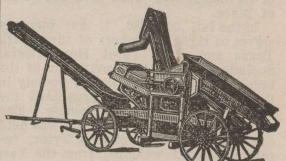
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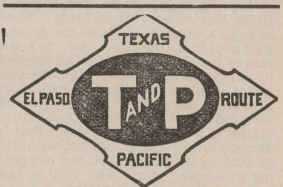
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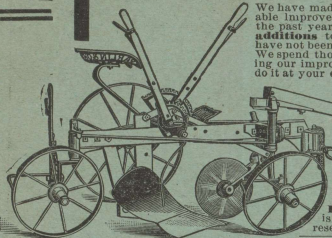
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THE TRICYCLE SULKY PLOW

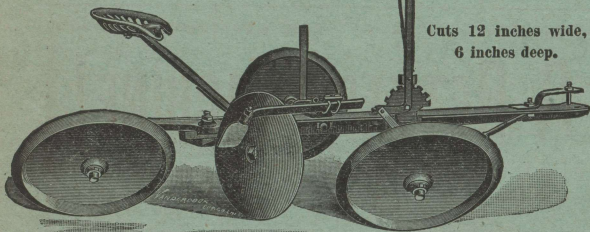


We have made exhaustive tests of several valuable improvements on the TRICYCLE during the year, and they prove to be valuable additions to the plow. These experiments have not been made at the farmer's expense. We spend thousands of dollars annually in testing our improvements, (many makers of plows do it at your expense, detriment and loss.) We are therefore able to place before our patrons goods of known reliability, and which can be purchased with perfect safety. Space forbids giving a description of the TRICYCLE here. Our circulars, which are mailed free to any address, give full description and testimonials. We will say, however, that for durability, lightness of draft, ease of management and perfect work in Texas Black, Waxy Hog Wallow Land the TRICYCLE is "in it," and is warranted as represented or money will be refunded.

We manufacture all kinds of Gang Plows, Disk Harrows, Steel Harrows, Stalk Cutters, Canton Clipper Plows, and are State Agents for the world-renowned Superior Grain Drills, Mowers, Hay Presses, Pile Threshers, Wagon Seales, Sweep Rakes, Sorghum Mills and Evaporators, Engines, Carriages, Carts, Harness, Bails, Cooper and Olds Wagons. Write us for your wants. **PARLIN & ORENDORFF CO. Mfrs., DALLAS, TEX.**

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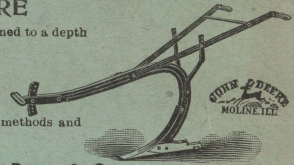
demand that the subsoil be loosened to a depth of 18 to 24 inches.

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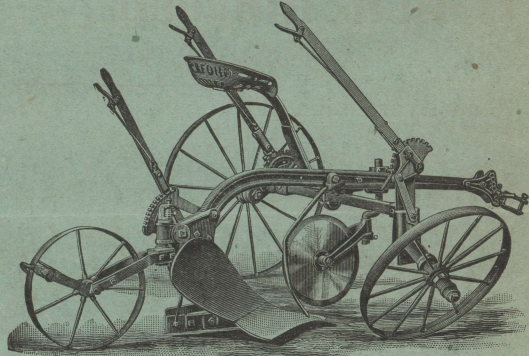
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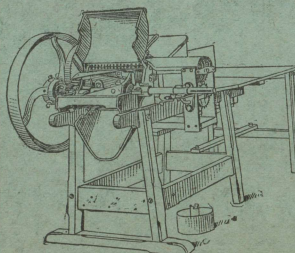
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