# AGRICULTURAL DEPARTMENT.

J. P. STELLE, EDITOR.

PUBLISHER'S NOTICE—All communications intended for this department should be addressed to PROF. J. P. STELLE, Fort Worth, Tex.

### THE STAKED PLAINS FOR GRAPES.

We have a letter from Mr. A. Rawlins, a well-informed citizen of Marienfeld, Tex., in which that gentleman details some very interesting experience had by himself in a short run across the line into Mexico. Dr. Sabin and party came down from Ohio, and after looking about over Texas for a time they purchased a large tract of land in Martin county, to be colonized by farmers and fruit culturists, mainly Ohioans. Being desirous of seeing something of fruit culture in Mexico, and particularly of vine culture, the party, after getting everything settled in Martin to their entire satisfaction, struck out for a visit to the sister republic, and Mr. Rawlins went with them.

At El Paso the party crossed the Rio Grande to Paso del Norte, where they were soon among the extensive Mexican vineyards of the Rio Grande valley. They made a special visit to the vineyard of Dr. Alexander, where they were kindly received by the doctor and his accomplished wife. The doctor and wife are of German descent, but have been in America many years, living on the Mexican side. Numerous questions were asked and as promptly answered, many of the answers being all "gilt edged" to the Ohio investigators. For instance:

"Doctor, how many grape vines have you?"

"I don't know exactly how many," was the reply.

"About how many, do you suppose?"

"Well, about 25,000."

"(!!) What variety of grape do you raise mainly?"

"The mission, exclusively."

"Does the mission ever fail to give you a crop?"

"Never!" Laughing, he added: "The mission fail?"

"But it falls with us in Ohio—we cannot raise it there at all."

"Neither can we successfully raise the Alexander here," continued the doctor, "but if we could we wouldn't want to do it. Here is the natural home of the mission grape, which is a grape superior to all others for heavy crops. Then it is a superior table grape, and one of the richest wine grapes extant."

"Oh, yes," continued the doctor, addressing his wife, and calling her by name, "give me the keys."

"Those keys," adds Mr. Rawlins, "opened the way for us into a large adobe building, its hard walls two feet thick. Inside those walls we found wine cellar No. 1, which was fourteen feet high and some 100 feet long. In this cellar were many hogsheads of new wine, the result of last year's vintage. From here we were taken to cellar No. 2, just about the same size as No. 1, No. 2 was full of old wine."

"I suppose from appearance of things here you don't sell any grapes," one of the visitors ventured to remark, "and that in consequence of having no market for grapes, you turn your entire crop into wine."

"You are off there," said the doctor. "I sell and ready sale for all the grapes made on my vines and for all the grapes I might raise on thousands of additional vines."

"But you would soon glut the market."

"Not a bit of it. The demand for grapes is steadily getting better every year. I prefer to turn my grapes into wine. Every year of keeping adds to the wine an improvement in quality, and therefore in value, of course, so as to give me a fine interest on my investment. Should I desire to do so I could at once sell all my wine at $1 50 a gallon, but for reasons already hinted at I prefer keeping it."

"Wonderful! What do you consider your lands worth per acre?"

"My lands planted to mission grapes are, at the vines five years old, worth $1000 an acre. I have learned from thorough experience, that nothing pays so well as the vine. I can make much more from my vines carrying the value of $1000 an acre, and taxable for that amount, of course, than I could to put out the money involved at any reasonable rate of interest."

"We tested the old wine," continues Mr. Rawlins, and could not do otherwise than pronounce upon it as a goods entirely hard to beat."

Commenting on the foregoing Mr. Rawlins states that "if lands planted to vines on the Rio Grande are worth $1000 an acre, surely we might say, with every safety, that our lands on the Staked Plains planted to vines would be worth $500 an acre, at least. Here we can raise the mission grape as well as they can raise it there, and our natural advantages qualify us to make a first-class success with near every variety of good native grape. It is now scientifically and practically demonstrated that we can irrigate the Staked Plains. This brings our grape capabilities entirely up to anything enjoyed by the Rio Grande valley, with the advantages in varieties cultivatable thrown in to our gain. Get these facts to be clearly understood and it cannot be otherwise than that large numbers of capitalists must see, with Dr. Alexander, that there is more money in viticulture than in anything else classing with ordinary investments, and that here on our Staked Plains of Texas, is a region as favorable for profitable investment as can be found on the whole face of the globe. Persons with money to invest would do well to make careful investigation as to what the Staked Plains might be made to do for them."

### TEXAS HORTICULTURAL SOCIETY.

Secretary David H. Watson has kindly supplied us with an advance programme of the State Horticultural society for its meeting to be held at Lampasas on the 1st, 2d and 3d of July, next.

On Wednesday, 1, the meeting will be opened with the usual formalities common in such cases. After the necessary business of the society has been attended to, there will be an address of welcome by some one whose name is not given, to be responded to by Mr. J. M. Howell of Dallas. Then will come in regular order a paper by Col. W. W. Ross of Dallas, entitled There is Gold in the Land; a paper by Dr. A. M. Ragland of Pilot Point, entitled The Free Use of Fruits is Necessary to Health in a Southern Climate; a paper by Professor S. H. Beach, jr., of the Agricultural and Mechanical college, entitled Injurious Insects and Their Remedies; a paper by Professor G. W. Curtis of the Agricultural and Mechanical college, title not given, and a paper by Mr. Frank Lerch of San Angelo, entitled Tom Green County as a Fruit Country.

The papers to be read before the society on Thursday are entitled, respectively: Small Fruits, by J. C. Newberry of Pilot Point; Grape Growing and Wine Making, by C. Nedevauser of Brenham; Watermelons, Their Culture, Profits and Importance as a Market Crop, by E. Crew of Hemstead; Evaporating Fruits from a Practical Standpoint, by J. W. Steubenranch of Mexia; Wholeroot vs. Pieceroot Stocks treated from the Standpoint of Vegetable Physiology, by Professor T. V. Munson of Denison; Fruit Growing in Southwest Texas, by G. Onderdonk of Nursery, Victoria county; Fungus Diseases of Fruit Trees and Vines, by Professor T. L. Brunk of the Agricultural and Mechanical college; The Peach in West Texas, by H. M. Stringfellow of Hitchcock; Pears for Profit in South Central Texas, by R. D. Blackshear of Navasota; Oriental Fruits, by J. F. Leydendecker of Traleesburg; My Experience with Oriental Fruits, by Dr. J. T. Whitaker of Tyler; Progress of Horticulture in North Texas, by Dr. W. W. Stell of Paris; Progress of Horticulture in the Pecos Valley, by B. K. Brandt of Pecos City; (subject not named), by William Watson of Brenham; Horticulture as a Factor in Human Development, by Mr. J. M. Howell of Dallas; Converting the Cross Timbers into Pine Forests, by Professor J. P. Stelle of Fort Worth; The Honey Bee and Poultry as Profitable Adjuncts to Horticulture, by Mrs. S. E. Sherman of Salado; Fruit Growing in the Mountain Districts of Texas, by J. F. Ramsey of Mahomet; Fruits Best Adapted to the Black Waxy Lands, by John S. Kerr of Sherman; Prospects of Horticulture by Irrigation, by A. Rawlins of Marienfeld, and Forestry, by Capt. W. G. Veal of Fort Worth.

Friday will be devoted to business matters of the society and to a drive about Lampasas in the evening.

On Saturday following the meeting there will be an excursion to San Angelo or some other point of interest to horticulturists.

The regular premium list for exhibits is not yet ready, but will be finished out in a week or so. In the meantime such friends of horticulture as wish to offer special premiums should, without delay, notify the secretary, Mr. David H. Watson, at Brenham, Tex. Already a number of premium offers are on the list. The Lampasas Board of Trade is down for $360, cash; the city of Lampasas will offer several special premiums; Professor T. V. Munson offers twelve special premiums; William Watson offers $100 in nursery stock; President Kirkpatrick offers $25 in nursery stock; Mrs. S. E. Sherman offers special premium for best essay on uses of extracted honey, and so on. All about the premiums will be published later.

The arrangements so far appear to promise the best meeting of the kind yet held in the state of Texas. If so much as half the papers on the list are supplied by the parties whose names are affixed we shall have placed into our hands next summer the finest collection of horticultural literature yet thrown together in the state of the Lone Star. All Texans should encourage the Texas state horticultural society.

### TRENCHING FOR POTATOES.

A gentleman met us on the street a few days ago and asked for our opinion as to the best method of planting Irish potatoes. We recommended without hesitation what is now known as the trench system. It appeared to be new to him, although we have several times described it in the columns of THE GAZETTE. We have strong faith in the system for Texas, yet we have never put it to practical test here, and have never met with any one who has. It is taking the lead, however, in many other states, and the same conditions which make it a success in those other states exist and are well developed in Texas. The Alabama market gardeners have adopted it almost to a man, and the same may be said of the market gardeners in Georgia.

The heaviest yields of Irish potatoes yet known to the world have been produced by the trench system. Some years ago the Rural New Yorker got mashed on the system, and offered certain premiums for the largest yield of potatoes raised by it. The premiums were awarded to results measuring near 1000 bushels of good tubers to the acre.

Of course the system was not an invention of the Rural New Yorker. We, with many others, were practicing it in our gardening operations before the Rural New Yorker started it on its boom, but the Rural New Yorker certainly deserves much credit for its agency in rendering the plan so widely popular as it now is.

The trench system as now most commonly resorted to in Irish potato culture is extremely simple. You first break and pulverize your land as deeply as you can conveniently. You next plow out your trenches for the rows to a depth ranging from twelve to fifteen inches. The work is usually done with a small turn plow, by running to and fro in the row and throwing the furrow up on each side. Next haul in some kind of well-decomposed vegetable matter suited to the wants of the potato, and with it fill your trenches well up to the top. Nothing could be better than thoroughly-rotted stable or cow-lot manure. If matter of this character should be employed you can mix it about half with the ordinary soil plowed up from the trench. You next plant your seed potatoes atop of the filled trench and rake the soil over them to the depth of from three to four inches; indeed you rake the entire land to a level, having filled your trenches so that, at the levelling of the land, your seed potatoes will lie from three to four inches beneath the surface.

This is all there is in planting Irish potatoes on the trench system. The after culture consists in simply keeping down weeds and grass, and breaking the surface occasionally by some kind of shallow culture to prevent baking. No plowing between the rows is resorted to; forsooth deep plowing between the rows would be against the crops. The system calls for culture entirely level. The rows are usually located from three to three and a half feet apart.

And now for a scientific explanation of the advantages claimed for this system: In the first place it is presumed that your land is well drained either naturally or otherwise. In other words, it must be what we would consider good garden land. A low, wet and soggy plat of land would not do at all, and about the same might be said relative to any other system. Having land of this character, proceed to ask yourself why you "ridge up" for Irish potatoes when planting on the old plan. You can not possibly explain the whys and wherefores in this case, and after you have thought a moment you will be able to see the whys and wherefores in the trench system. Your potatoes planted in a ridge have three surfaces of the row exposed to evaporation and drying out—the top of the ridge and its two sides. In the trench system you have but one narrow surface exposed—the top. The two sides, as would appear in the ridge, are beneath the ridge, and hence not exposed to evaporation. In this country it is drouth alone that cuts short the potato crop, hence in the trench system you have but about one-third as much danger to encounter in that direction as you would have in the old ridge system.

There are other arguments in favor of the trench system which might be presented with considerable weight, but certainly this protection from the effects of drouth ought to be sufficient to induce any reasonable man to adopt it. There is no argument to offer against it. The only thing anyone could say would be that it costs a little more to get in the crop than would the old plan. If the crop on the old plan is put in as it should be the cost in the two systems will show no material difference. But when it comes to the after culture the trench plan will have decidedly the advantage. There will be no scraping down of ridges, and plowing out of middles and hauling up of soil to the plants. But the greatest gain will be found at the harvesting time. You may not be able to burst the rows wide open with a shovel plow as you might do in case of the dry and baked ridges of the old system, but you will be able to get out double the quantity of potatoes, at least, in almost every instance. A Georgia gardener once assured us that the trench system, properly worked, would come nearer converting a plat of land entirely into potatoes than any system he knew anything about, and he thought he had experienced a tussel with about all of them.

We cultivate sweet potatoes on this same plan, varying, of course, in filling the trenches entirely full and setting the draws above them. It has invariably given us fine results and entire satisfaction in every respect.

### APPLIES TO THE STAKED PLAINS.

A census bulletin for March, issued by the United States department of the interior, says of New Mexico along the Pecos river just above the Texas line, that while viticulture is comparatively new there, it carries good promise of a prosperous future. Not only can the native varieties of the grape be successfully grown but the European (Vinifero), also flourishes. In 1889 there were 1186 acres of bearing vines, with 9000 acres of new vineyards. From the bearing vines were produced 296,500 gallons of wine and 1770 tons or 3,558,000 pounds of table grapes. "The information received from New Mexico by the census office shows a great advance in viticulture since irrigation has proven practicable. * * * Mr. E. G. Shields, a leading horticultural authority, says he has tested thoroughly peaches, apricots, apples, nectarines and French and German prunes, and is much pleased with their success. He refers exclusively to the Pecos valley. * * * The grapes grown successfully in New Mexico for raisins are the muscat of Alexandria, the muscatel and the sultana. He feels assured that in two years (from 1889), there will be 100,000 acres in grapes along the Pecos valley."

All of which ought to be good reading for Texas people living further down along the Pecos. They certainly have every advantage that could be enjoyed by the Pecos valley people up in New Mexico, with a decidedly better climate thrown in on their side. And than the thing hangs on nothing of mere guess work, for extensive practical tests have already been made. The Texas people of the Pecos valley are irrigating and getting out of it results so extremely favorable as to be almost an astounding surprise to themselves.

### CREAM AND BUTTER RATION.

The Mark Lane Express of England, one of the best authorities under patronage of the English people, says a very conclusive experiment in feeding for cream and butter was made last summer by Mr. Thompson, V. S., of the Aspatria agricultural college. The subject of the experiment was a well-developed Irish cow, and the experiments began at four weeks' age of the calf. The cow was on grass at the time. The experiments were conducted with scrupulous care as to accuracy.

Through the first fortnight of the experimentation the cow received three and a half pounds of oats, both night and morning, and as a result produced eight pounds of butter weekly. During the next fortnight an equal amount of decorticated cotton cake (cotton seed meal) was given instead of the crushed oats, and again eight pounds per week were produced, but the butter was of a firmer texture and a richer color. In the following fortnight one and one-half pounds of decorticated cotton cake was given night and morning, with the result that ten pounds of butter per week were produced.

This led to the conclusion that too much cotton seed meal had been given in the preceding test, as the cow seemed to gain on the one and a half pounds against the three and a half pounds. Of course it will understood that the cow was all the time on grass in a nice and fresh pasture.

Through the fourth fortnight equal parts were used of Indian (corn) meal, crushed oats, wheat bran and cotton seed meal, the mixture being dished out as a three pounds ration night and morning—six pounds a day. In response to this ration the butter product increased to fourteen pounds per week. In the following fortnight the cow was again placed on the first-tried ration of crushed oats, with the result that the yield of butter dropped from fourteen pounds to six pounds per week. It is hardly necessary to add that the cow was then placed permanently on the most successful ration, and she continued to yield up to twelve and thirteen pounds of butter for a considerable time.

So satisfying has this ration proved, says the Express, that the newly formed creamery company at Aspatria has recommended it to the notice of all the farmers who supply that establishment with milk. As the farmers who send milk to that creamery are paid for their milk not merely by measure, but also by quality, the ration has been largely adopted with satisfactory results.

Another experiment was made in which linseed instead of cotton seed meal was used, but the linseed meal gave results considerably below those from the cotton seed meal.

### WHY BOYS QUIT THE FARM.

Bob Burdette of the Brooklyn Eagle is the individual referred to by Bill Nye in his Fort Worth lecture of some nights ago as having been introduced to his audience as the greatest living humorist. When through with his spread-eagle-introductory ovation, the orator suddenly remembered that he did not know the name of the man being introduced, so he stooped over to the humorist and asked for the name. This so disgusted Bob Burdette that he replied "Bob," and so the great man was introduced to his audience as Mr. Beb.

Well, this Mr. Bobb has lately been dabbling with the perplexing but much discussed question of why so many boys evince a disposition to quit the farm and strike out after life in the town or city. He says: "Why do boys quit the farm? has at length almost waxed into a continuous wail."

"But my dear sir," he continues, "there are several good reasons, and it might be well enough for the farmer opposed to this wholesale emigration of the farm boys, to take a few of those reasons to his devotional closet for solemn consideration. One reason is because the boy does not attain to the age of sixty-five in the course of the first year of his life. Then, if there is a hoe on the farm weighing fourteen ounces, bright as a nickle plate and sharp as a razor, and another hoe weighing somewhat less than a breaking plow, with an edge on it like a hammer, and a sapling with the bark on it for a handle, the hired man takes one and the boy gets the other, and every man in America knows which is the other.

"Did you ever stand with such a hoe in your hand away down in a corn row on some airless, still, hot summer day, twenty acres of corn blades and tassels wilting about you, standing fourteen inches higher than your head, shutting out every last trace of breathable air, and then hear a locust down in the edge of the timber strike up his long, strident monotonous call to make it ten times hotter? And all this time a cool creek, not a mile away, loitering in deep, silent pools in shady places in the woods, or breaking into merry, dancing ripples over the pebbles? And in the big deep holes the fish just lying around, lonesome for a boy? Well, then, you know why some boys leave the farm."

Of course it will be understood that this article is intended for the old folks—it would not interest the boys.

### TOO MANY FARM CATS.

We have no war to make on cats. If we had we would leave it all to the French scientists—see note in Popular Science column for last week. The truth is, we rather like cats, but an article by Mr. W. W. Stevens appearing in the Farmers' Home Journal of Kentucky, would seem to make it appear that the cat is not held as a universal favorite even outside of France. Mr. Stevens begins by stating that he resides in the country, and that many stray cats find their way to his plantation. He thinks kind-hearted neighbors must imagine that he is about out of cats, and is grieving seriously over the shortage. For a long time his sympathy did go out for these homeless wanders and he took them in, fed them at the barn with good, fresh milk, and in turn had his young chickens caught by them. In addition to this act of kindness on their part they robbed every bird's nest on the premises. Finally he was forced to the unwelcome conclusion that as a destroyer of insect-devouring birds the cat stood on the very top of the ladder, so he oiled up his shotgun, and now those cats are not there. The gun remains loaded. He adds: "With the instinct resulting from many generations of use, birds return each year to their accustomed places, and when they see their young fall a prey to the cat as soon as they begin to fly, or perhaps before they get out of the nest, as a matter of course they seek safer retreats, and desert the premises. Very few young birds escape, and this to a large degree accounts for the decline in numbers of our feathered friends. Cats that learn to prey on birds don't relish rats, and are generally less helpful to the farmer than would have been the birds destroyed by them. Give the birds a chance, is my advice, and that don't mean that we should give much chance to the cats."

## TO CORRESPONDENTS.

This department is devoted to answering such questions as may be asked by our subscribers, which may be of general information. Inquiries of personal character that require answer by mail should always have stamps inclosed. Please give full name and postoffice address in addition to any such signature as "Subscriber," or "A. G. D," not for publication, but to enable us to communicate promptly with the enquirer. Parties desiring answers by mail must inclose stamp for return postage.

### SWEET POTATOES, SWARD GRASS, ETC.

I have been more than pleased with your recent articles in THE GAZETTE on the sweet potato for Texas. Most heartily do I indorse all you say of it as a food or feed for man and beast. I regard it as being both bread and meat, which is entirely more than can be said of the Irish potato. The sweet potato is undoubtedly one of the greatest food gifts, in a vegetable way, that an ever-kind Creator has made to man. Therefore, go ahead with your efforts to lead the people of Texas into a full realization of the special importance of that great gift.

I am furthermore well pleased with your expressed opinion with reference to eating meat of hogs fattened in close and filthy pens. Such meat is certainly unwholesome. Hog meat is unwholesome enough at best. This being the case, what is there left for us to expect of hog meat made in the midst of filth? I hope you will continue to work on this theme—it is certainly one calling for an extensive awakening.

What you say in a recent article concerning the so-called "nigger-killer" sweet potato fully accords with what I myself know of that variety. It is certainly a fine potato, and if you can learn where seed of the variety could be had, you might confer a great favor on the readers of THE GAZETTE by letting them know where to send their orders. I know of lots of Texans who would like to get a start of the "nigger-killer" potato.

We have up here in Clay county a very fine variety of sweet potato. We call it the "Texas yam." It much resembles the old "yellow yam" in sweetness and sugary character. A sweet, syrup-like wax breaks out of it in the process of baking. It is highly prolific and a very fine keeper. Is sugary and mealy even when first dug, and in the growing season seems to stand drouth better than any other variety. The old "yellow yam" is a fine potato, of course, but it will not compare with this Texas variety in standing drouth. It also yields draws in immense quantities—they spring up from the bed as thick as the hair on a dog's back, so to speak. Dry as it was last summer, I raised a small crop of this variety averaging fully 475 bushels to the acre. I think it can be made to average that quantity to the acre all the time under proper management. This, it seems to me, ought to be regared as good enough for the sweet potato.

Please let me know through THE GAZETTE where seed of the Texas sward grass could be had. I refer to the grass mentioned by you as much resembling Bermuda grass, and often mistaken for that grass by people of Texas.

One more question: Is Clay connty in any of the regular artesian areas?

O. P. HAMMEL, Bellevue, Tex.

Thanks. If any one has the real "nigger-killer" sweet potato for sale he could evidently make a ten-strike by advertising it in some prominent paper. We know of none for sale.

There is in Tarrant county a potato called the "Texas yam," but it is dry and not very sweet, hence it could not be the variety described by our correspondent. A potato known as the "East Texas yam," and raised here to some extent, seems to well accord with the description in all respects save one. It is not overly prolific; but is a very fine potato for table use—really there is but little difference between it and the old yellow yam. As a rule it brings more on the market than any other potato raised in this section of the state.

So far as we know there has been, as yet, no Texas sward grass seed on the market. There ought to be, however, for it seeds freely and is certainly a very fine grass. It can be propagated by roots or sods the same as Bermuda grass.

Clay county is not within any artesian area as yet located, though one may exist, or in other words, there are no established reasons for supposing that artesian water might not be had in portions of Clay county. The county lies just a little west of the Fort Worth-Waco artesian area.

### AN UNPLEASANT POULTRY TALK.

With much interest I have been reading in THE GAZETTE your talks on disease germs supposed to be communicated to man by the lower animals. I have strong faith in that germ theory as relating to diseases, and think it highly probable that we are now entering the dawn of the most remarkable era yet passed by man—one in which we shall know all about every manner of disease. Medical science is a great science, but as yet there have been some things in it not entirely plain to its devotees.

In the course of my reflections over this disease germ matter it has occurred to me that I might suggest to you a theme for an article, which theme would be not only entirely new, but also one of great importance to the people everywhere. It is with reference to our chickens. Without further preliminary I will proceed to state that the natural disposition of the chicken is to feed upon filthy substances, and science has shown that it is susceptible of retaining the character of those substances in its flesh. These facts, in my opinion, render it necessary that the eyes of the people should be opened to the matter, to make them more guarded relative to what they are permitting their fowls to eat. It is more than merely probable that contagious human diseases might be communicated by using the flesh of chickens under certain conditions. There is nothing unreasonable in the supposition that a fowl fairly exposed to some disease, through its feeding, might develop that disease to a slight degree, at least. And even other than regular contagious diseases, so considered, might be developed in the fowl on such exposure. I have in mind a pretty strong case in point. One of my neighbors was seriously affected with chronic nasal catarrh, and the discharges were recklessly thrown about the yard where his chickens ranged. I kept an eye on those chickens for some time, and the result eventually convinced me that I saw well-developed symptoms of catarrh among the gentleman's fowls. This discovery completely cut me off from some of my best living, for previous to that time no man had relished a broiler more than had your humble servant, but now no more chicken in mine unless I know exactly whence came the chicken, and the circumstances of its previous condition are entirely to my satisfaction. My friends were surprised at this sudden let up on "chicken fixin's," on my part, and not wishing to debar any of them from enjoying what I could no longer enjoy, I kept my own secret. It is but reasonable to suppose that many will be found ready to laugh this idea of mine to scorn, nevertheless I cannot help feeling that I was entirely justifiable in my peculiar abstinence from chicken fixin's, under such circumstances as already referred to. What say you?

A PHYSICIAN.

Fort Worth, Tex.

It must be admitted that this is rather an unpleasant subject to handle, yet we must agree with our well-informed and scientific correspondent that it is one of special importance to the people. Upon this line of reasoning we wade in.

Of all living creatures whose flesh is used af food by man, not one is more filthy in its food habits than the domestic chicken, if left to its own choosing; and, as a rule, none are more unreservedly so left. And it may be added that in none other of the filth-feeders commonly used does the food wield a more marked influence upon the flesh. Such is the verdict of science. The hog is filthy enough, in all conscience, as to diet, yet with the hog the case is quite different. Nature made the hog to fill the office of scavenger in the animal world, consequently it was so constituted as to throw off most effects of bad food. In the laboratory of its organization, as we might say, certain principles conducive to the sustenance of animal life are sought out and assimilated, while most else is promptly rejected, a thing clearly established in the fact that you cannot poison a hog. It discards without effect, every poisonous elememt taken with its food, no matter what that element may be—even the most deadly poisons, as arsenic and strychnine, for instance, are to the hog no more than powdered chalk. But not so with the chicken, which was never created for duty as a mere scavenger—few creatures are more easily affected by poisons than the chicken, showing that every element taken by it goes directly to the circulation. You have this last well established in the not uncommon usage of feeding chickens on nux vomica to kill hawks. Nux vomica will not kill a chicken, but will kill a hawk. When the chicken has been dosed a little with nux vomica the unfortunate hawk happening to partake of its flesh promptly pegs out. Than this there could be no stronger proof of a peculiarity in the chicken which causes its flesh to invariably absorb and hold the principles contained in its food. You might feed a hog on nux vomica through all the days of a long life, and neither a hawk or anything else partaking of the flesh would be affected in the least.

Notwithstanding all there is in favor of the hog as a filth-feeder with comparatively clean flesh, the ancient Jews, who were a wise people, observing its food habits saw proper to taboo it as an unclean beast, wholly unfit for man's food. Had the chicken, which was then only a wild bird in the jungles of India, have been a domestic fowl under their observation as we have it to-day, when those laws were made, there is little room for doubting that their unclean food ordinance would have been made to cover it as rigidly as the hog.

In illustration of how far the chicken's food imparts its character to the flesh we may mention a case, rather unpleasant to read about, we must admit, that came under our own personal observation years ago. An inventive genius living in the near neighborhood of the little town of Caseyville, Ky., on the Ohio river, bethought him of a new way to make a fortune out of the poultry business. It was very soon after the close of the war. He had no farm, but he arranged some suburban lots with high board fences that the fowls could not fly over, and then scoured the country in the purchase of all the chickens, old and young, that he could find for sale, intending to fatten them for market, build up for himself a reputation for fat fowls, and after he had used all the surplus of the region, proceed into fowl raising on a most gigantic scale. His next step was to contract with the town authorities for all the dead animals within the corporate limits, he agreeing to remove them promptly for the carcass. Caseyville was then a town in which everybody could keep stock on the streets, who desired to do so, and the year figuring in this reminiscence was a hog-cholera year, therefore this poulterer operating on a plan of his own found a good deal of work to do in order to fill out his contract with the town fathers. The carcasses were taken directly to his poultry lots where he chopped them up for his fowls to feed upon, calculating that the animals direct, with the resultant insects, would be about all the food needed in his poultry operations.

But little time elapsed ere that gentleman's hennery presented no special attractions for the visitor, it being in the summer season of the year. People who had business in that neighborhood went round by some other way. Finally a shipment of fat poultry was made to Evansville, Ind., where it created something of a sensation. There appeared nothing unusual about it until the cooking process was put under way—then speedily prevaded the kitchen an odor so extremely peculiar, and so remarkably unlike the spicy breezes of Ceylon's isle, that the cook had to go out and stand in a vacant back lot until dinner was ready.

Only one shipment of poultry was ever made to Evansville from that particular poultry yard, and we think it highly probable that the name of the ingenious proprietor of the said yard has not appeared in the printed list of hotel arrivals at that city up to the present day.

The gentleman's new-fangled poultry industry didn't last long. His fowls soon died off by the wholesale, as we say, developing, as it was asserted, hosts of diseases never before heard of as affecting poultry, such as hog cholera, blind staggers and, in short, about everything that had destroyed the town animals with which the poultry had been fed.

It is not the aim of this writer to in any way set people against the use of poultry as food, but rather to make people more careful than many of them are, with reference to what their poultry is feeding upon. Than the flesh of fowls none could be more cleanly, provided the food making it is of a cleanly character, but when this last is otherwise the positive excellence and purity of "chicken" would scarcely be safe to bet on.

Now that a reform is going on in everything, much time cannot elapse ere it reaches this chicken question as sprung by the doctor—our correspondent. When it does come up it will amount to about what has panned out in the butter reforms. The man with a reputation for good and nicely handled butter can always sell it at fair prices, while the other fellow is forced to take his chances and to often find the chances against him. It will be exactly that way relative to poultry—the man known to supply his poultry with only cleanly food, and to keep them away from all other, will be able to find a ready market, while the other fellow will be running at haphazard.

It is needless for us to go into detail as to what ought to be considered proper food for chickens. The only thing needed is to keep filthy things away from them. Some persons might conclude that insects feeding upon vegetation would properly class under the head of improper food, but not so. Insects of the character mentioned are the natural food of poultry.

### TEXAS BLUE GRASS.

In your article on Tarrant county you mention Texas blue grass as growing along your streams. Do your seed merchants keep the seed for sale? If not, can you tell me where I might procure seed? I am extremely anxious to get out a large meadow to Texas blue grass. Please answer through THE GAZETTE.

C. C.

Orange, Tex.

We know of no one who keeps the seed of Texas blue grass for sale, though doubtless somebody is doing it, as immense quantities of seed are sown every year outside of Texas. The Texas seedman don't seem to be much of an advertiser.

## POPULAR SCIENCE.

### ONE HUNDRED MILLION SUNS IN SIGHT.

**An Artesian Well that Flows Bats—A Sense Not Explained—Plea for the Bat. The Brewery Chimney is Shaky. How Plants Germinate.**

California now has the greatest telescope in the world, and it is revealing wonders in astronomy that are perfectly astounding. Professor Charles A. Young, the eminent Princeton astronomer, says the work it is doing correctly stamps it as the leading wonder of all ages up to this time. It has given the observer a distinct view of 100,000,000 so-called fixed stars. Each of those stars is undoubtedly a sun, like our own, with a planetary system revolving around it. Each sun is pouring forth, should that be an admissible term, volumes of heat and light equal to the volumes of heat and light supplied by our own sun, at least. Of course we can understand comparatively little of this—it is something too great to be grasped by the human mind. The telescope brings to view stars of such small magnitude—which simply means stars so distant—that it would require 30,000 of them thrown into one to render them so much as dimly visible to the naked eye. The immensity of space is entirely beyond any human comprehension. It is eternity, so to speak. Theoretically what we see through this telescope is merely as a drop in the bucket so far as relates to the great whole, if there is any such thing as a whole. Doubtless could the powerful telescope under mention be set up on the most distant star revealed it would there bring to view more than 50,000,000 new suns not now within the range of its power.

* * *

The papers are now passing it around that "when workmen were drilling the artesian well at Centreville, Iowa, they tapped a subterranean passage which seemed to be completely filled with bats, not dead or petrified bats, but those of the real live kind; this at a depth of nearly 600 feet below the surface. Twenty-five or thirty of them were brought out alive and well. They seemed to be of the common gray species, but were much larger." The papers seem to regard this as something extremely wonderful, but there is nothing really wonderful about it. Four or five miles in from the mouth of the great Wyandotte cave of Indiana there is a room so thickly hung with bats through the winter season that visitors passing it must use great precaution not to disturb and start the bats flying. They are not dormant, though they hang from the rocks in immense bunches and do not move unless disturbed. The guide invariably cautions the visitors under his charge not to disturb the bats, as once set flying they would knock out all lights in a moment. Of course the thinking person will readily understand that this Iowa well has simply struck some such "bat chamber" in a cavern somewhere communicating with the outer world. The "bat chamber in the Wyandotte cave is six or seven hundred feet beneath the surface of the country.

* * *

Speaking of the bat leads us to think of the fact that it has a sense not vouchsafed to other animals. It is wholly without the sense of sight, yet it flies through small openings at full speed, and traverses these long and totally dark caverns with as much ease and safety as the mocking-bird would find flying across the garden at midday. It has a sense which enables it to locate objects the same as if it could see. So far this is something that naturalists do not appear to have worked upon. It is something well worthy of their attention, undoubtedly.

* * *

Not a few persons have a disposition to kill the bat when it comes into the house at night. This is wholly wrong, for no creature could be more harmless and few more useful. When it pays us a visit it is after our flies and mosquitos. If you treat it kindly it will soon get to coming in regularly, and will keep your house pretty clear of flying insect pests. The old foolish notion that it means bad luck or breeds bedbugs is simply nonsense unworthy an enlightened age like the present.

* * *

Tall chimneys of solid masonry shake or oscillate to every passing breeze—such chimneys as the one at the Fort Worth brewery, for instance. M. Van Gault of France has lately been making some observations with reference to such chimneys. He got at the oscillation by observing the shadows of the chimneys as cast upon the ground. One of his special studies was a chimney 115 feet high and four feet in diameter externally at the top. By carefully watching the shadow he found that in an ordinarily high wind the oscillation of that chimney at the top was a little over twenty inches. He found the average about the same in all good chimneys. By him the oscillation is accepted as a good sign, telling of perfect masonry and such firmness of structure as to render it springy.

* * *

According to Professor A. C. Atlee, the genesis of a new plant from a seed is a complicated, and rather a mysterious process too complicated to admit of brief explanation. Suffice it to say that in the ovary of every perfect flower there are one or more little sacks filled with water in which floats a vegetable cell. This cell will perish with the flower unless it is fertilized by a pollen cell from the anther of this, or some neighboring flower of the same or some nearly allied species. In this event the germinal cell in the ovule begins a process of development which ends in the germ of a new plant, which may lie dormant in the seed for an indefinite period, till favorable circumstances call it into activity, and it begins the work of vegetable life—a new individual.

* * *

Some horticulturalist claims to have discovered a new method of setting buds in propagation of trees, which he holds to be much better than the old way. It consists in making the cross cut on the stock at the bottom, instead of the top of the vertical cut and shoving the bud in upward under the bark, instead of downward as on the old plan. This he says causes the bark to better shelter the bud from rain than in the old way, and hence largely increases its chances for success. The thing appears entirely reasonable. We suppose the cut for the bud would need to be a little different from the usual cut so as to leave more wood and bark above than below. Of course the bud must be set the same end up as on the old plan.

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