

THINGS WORTH KNOWING.

Only 5 1/2 per cent of the total area of the world is tillable. The mines of Butte, Mont., have a combined pay roll of \$3,000,000 a year. The Argentine Legislature is considering the construction of underground railways for Buenos Ayres. It is just being realized that the Trans-Siberian Railroad was a poor job from an engineering standpoint. The observed rate for the sound of "a" in "great" is 420, and for the sound of "a" in "ma," 770 waves a second.

The telephone and telegraph wires of the United States would encircle the earth at the equator more than 600 times.

To prevent the alteration of checks or other valuable papers an inventive genius has brought out an electric apparatus which burns tiny holes in the paper as the ink is written.

Electricity has at last been applied to the Teddy bear, a Maryland man having patented one that opens its jaws and flashes lights from its eyes, nose and mouth, when a battery in its interior is pressed.

The work on the Jungfrau Railway is progressing so rapidly that it will probably be opened next year to Jungfrau Joch, where a station and hotel accommodating 200 persons have been hewn out of the solid rock.

Though hydrophobia has been stamped out of Britain, it is still rampant in Germany, where every year over 2,500 dogs and cats afflicted with the disease are destroyed.

A patent on a horseshoe designed to prevent the stumbling of horses was granted in Panama four years ago.

FASHION HINTS



One of the prettiest models for a dainty little afternoon gown of batiste, is shown above. The waist is of fine ecru lace, the batiste being of that color, and there's just a touch of light blue in the embroidery.

"A Mite Too Frying." Bushby had many natural advantages and beauties, but Mrs. Amer Crane, who was a brief sojourner in the place, having been there only a matter of ten years or so, never appreciated it. "She was aching to get back to Nashy the whole enduring time," said one of Mrs. Crane's Bushby neighbors, "and I was glad to see her go, feeling as she did."

"What was it she didn't like about Bushby?" asked one of the summer residents, curiously. "She said she 'didn't get the news' of the day quick enough to suit her," quoted the neighbor, with as near an imitation of Mrs. Crane's air as she could manage.

"As I said to my Asy, what on earth she wanted more than we have in the way of newspapers here, I don't know. "When you consider that there are five telephones in town, a grocery wagon driven by Lucy Grant's boy twice a week, Lucy Grant herself to sew for everybody in town by the day, and all taking milk from Jed Kimball, I don't know how we could be any better fixed. I call anybody that wants more news 'to-day than Bushby folks get a mite too prying myself."

Gladdening His Heart. "Dear papa," wrote the little girl at the summer resort, "I have gained six ounces in weight since we came here. Mamma sends her love. Please write to us to-morrow. Send your love and all the money you can spare."—Chicago Tribune.

While the Sparrow Cop Looked On. Ardy Keap—W'y don't ya roll furder along under de tree, an' git out o' de sunshine? Solon Dodday—Too blame much like work.

Nothing New. "Has your wife found a house yet?" "No. You see, we've moved so often in the last ten years that it's almost impossible for her to find a place with some improvement that we haven't had at one time or another."—Detroit Free Press.

Objection Sustained. Judge—The witness told all that happened on the second floor. Now why do you object to his telling what happened on the third floor? Counsel—Because, if I please your honor, that is another story.—Brooklyn Eagle.

FIRE BLIGHT IN APPLE TREES

A Brief Description of the Disease and its Cure. By H. S. Jackson, Oregon Agricultural College, Corvallis.

Fire blight is the most serious of all the diseases which attack the pear and apple. It is a contagious disease of bacterial origin which, under proper conditions, may attack any part of the tree. Besides the pear and apple, the quince, wild crab apple, hawthorn, mountain ash, serviceberry and some other pomaceous trees are subject to attacks of this disease.

Myriads of germs are present in all freshly blighted portions of the tree and in the sticky ooze exuding from cankers. The germs live almost entirely in the sappy portion of the bark, though in some vigorous-growing varieties of pears the germs have been known to invade the sap wood to a limited extent. Fire blight occurs in more or less severity in nearly all parts of the United States where pears and apples are grown.

In Oregon fire blight has appeared in two general localities—one in the Southwestern part of the state, including the Rogue River valley, the other in the Northeastern part.

Beginning in the spring the first apparent damage produced by the disease is in an infected orchard in the blighting of the blossoms. Infection is brought about by insects, principally bees, which have visited a case of hold-over blight and become covered with the organisms contained in the sticky exudation, inoculating the flowers in their search for nectar. The organisms divide and multiply in the nectar and are able to enter the living tissues through the unprotected nectaries. Having entered the tissues they quickly blight the blossoms, pass down the blossom-stem and into the fruit spur, killing the tissues and cutting off the leaves from water supply, causing them to shrivel and dry, thus producing "fruit spur blight." The latter occurs several weeks after blossom infection. In very serious cases nearly all the fruit spurs may be blighted in this way and the trees set no fruit. Usually the germs die out and do not grow into the twig or branch on which the spur occurs, but occasionally the germs may continue into the bark of the branch at the base of the fruit spur and form a typical canker. Fruit spurs on the larger branches are a fruitful source of body infection and many cases of blight canker originate in this way.

The name "fire blight" is given to this disease because of the characteristic appearance of pear foliage on twigs or branches which have been killed by the organisms. The leaves turn black as though scorched by fire and frequently remain on the tree during the following winter. It should be noted that this color of the foliage is characteristic of the pear when it has been killed during the growing season. If a grower not familiar with the pear blight desires to know how the "twig blight" looks let him girdle a twig in mid-summer and watch the results.

The cankers are also quite characteristic, but are very variable in appearance. The disease progresses most rapidly in the fleshy outer layer of the bark and at first produces a watery appearance in the affected area. Later the tissues of the bark are more or less broken down and the cankers become dark in color. Besides the blight cankers found on the limbs and trunks, one frequently finds in some varieties of pears and Spitzenberg apples a larger canker at the surface of the ground extending up on the trunk for some distance and down the large roots. This condition is called "collar rot," and may result from a blight canker.

A pear tree when badly cankered is easily recognized at a distance in the early autumn by the general reddish cast to the foliage. On the apple the foliage of twig and fruit spur blight turns brown and dry.

One of the most fruitful sources of infection has been by the pruning shears or saw. In pruning, if an active canker is cut into, the tools become infected and serve as inoculating instruments to spread the disease. The only method known of controlling fire blight is to cut out all cases of cankers wherever they appear. Spraying with fungicides of only supplementary value and the various blight cures are worse than useless.

Experience has shown that it is of little permanent value to attempt to cut out the fruit spur and twig blight as they appear. Unless these forms of the disease extend into the branches on which they occur and a canker is formed the disease usually becomes naturally limited and the germs gradually die.

The efforts of the grower should be directed to cutting out all cases of blight canker and body canker during the fall, winter and early spring, when the cankers have become more or less limited in their growth and are not actively spreading.

Summer cutting is intelligently applied is frequently of great value, particularly where there is only a little blight. In the autumn before the leaves fall is a good time to do the cutting, as all cases of twig blight are easily observed.

The trees should be particularly examined for cases of the collar rot. It is this form of the disease that causes many trees to be killed outright. In cutting out cankers it is necessary that the tools be kept moist with some good disinfectant. If this is not done each cut will re-inoculate the germs into the bark at the edges of the canker and the labor may thus be useless.

Corrosive sublimate in a solution of one part to one thousand of water has been found to be the most satisfactory disinfectant. The solution is a violent poison. It must be kept in glass.

Information Free to Orchardists. The Department of Entomology and Plant Pathology of the Agricultural College at Corvallis, Oregon, will be glad to answer inquiries relating to insect pests or plant diseases at any time. Always include with your inquiries as full a description of the trouble as possible and send specimens for examination. Address: Department of Entomology and Plant-Pathology, Oregon Agricultural College, Corvallis, Oregon.

Editorials Opinions of Great Papers on Important Subjects.

USE FOR OBSOLETE BATTLESHIPS.

PLAN for the fortification of Key West, lately presented by a naval officer in a service publication, contains an interesting suggestion for the practical use of obsolete battleships in coast defenses. It is well known that a modern battleship deteriorates every year by comparative loss of speed and mobility, without losing power for offense or defense.

After from ten to twenty years ships as powerful and impregnable as ever have to be withdrawn from the fighting line because they cannot keep up with newer models in speed or agility. Yet if these ships could fight at anchor, like the French fleet at the battle of the Nile, they would be nearly as effective as ever. The suggestion we have referred to is that they should fight at permanent anchor. The strategic position of Key West is so important that it should be made an American Gibraltar to guard the Gulf and Caribbean sea as that famous rock guards the Mediterranean. But Key West is a low coral island, surrounded by deep lagoons and coral reefs almost awash. The defenses of the main island have so little command that outworks are necessary for complete security.

It is proposed to obtain such outworks at a cheap rate by stationing the old monitors in shallow water on these outer reefs and imbedded each solidly in earthwork protected by ripraping. That will make of each useless war vessel a stationary fort armed with two or four 10 or 12-inch guns in turrets. It is further suggested that when our older battleships, from the Oregon class down to those just before the Dreadnought class, become obsolete for mobile service at sea, they can be made cheaply and effectively useful by imbedding them in artificial islands in shallow water off harbors of slow and difficult approach, like those of New York and Hampton Roads. This would give to each long life as a stationary fort after it had outlived its usefulness as a mobile battleship.—Farmers' Dispatch.

THE OLD AMERICA.

IN THE year 1850, about the time that Charles Dickens was engaged in his dyspeptic tour of America, G. P. R. James, another English novelist, was an American visitor, and wrote a letter, sold at auction in New York last week. It is a document of interest to those outside the glorious company of autograph collectors. Wrote James when at New Haven:

"In passing through this land one sees no poverty, no squalid wretchedness, no hovels and old huts. Great good humor, too, is visible everywhere among the people; each man seems to feel that by industry he can get on as well as another. There is little of that jealous rivalry, none of that irritable envy that we see in older lands, where we are all struggling for that bread which is not sufficient for the whole." Here is an echo of the old America. Great good humor prevalent, a minimum of jealous rivalry and irri-

A REAL COMPLIMENT.

It is not often that an author may listen to a perfectly sincere tribute to his work, one which he may be sure is not influenced either by friendship or courtesy. W. B. Woodgate, however, in his "Reminiscences of an Old Sportsman," tells how he paid such a compliment at a dinner at the Garrick Club in London.

The company were all comparing notes as to leading dramatic and literary feats, and my opinion as to novels was asked. "As nearly as I can remember, I said, 'You will laugh if I mention a novel that probably none of you ever read, and by a man named Jeaffreson, whom perhaps you never heard of, but which to my untutored mind has always struck me as head and shoulders over ninety-nine out of a hundred; a book called, 'Live It Down.' The third volume especially is to my mind unsurpassed for denouement of plot and sketch of character.'"

Such was my speech, delivered slowly and deliberately. There was a strained silence in the room as I concluded. Then some one asked, solemnly and pointedly, "Is that meant for a jest, Mr. Woodgate?"

"Jest! Why? Not at all. I read the book in my Oxford days, but have never forgotten and have more than once read it, and hold to what I say, though I do not claim to be a judge of such matters."

"Perhaps you are not aware, then, that Mr. Jeaffreson is sitting beside you?" "I was taken aback, and looked at my right-hand neighbor.

"The other side," I was instructed; and I faced the left-hand guest, with whom I had been having much interesting conversation.

Cordy Jeaffreson smiled benignly as I stammered apologies for my personal acquaintance with him as "probably unknown." Of course I was aware that a writer of that name had written "The Real Lord Byron," and had a high literary status, but had no idea that he was identical with the author of the novel in question.

He took the episode good-humoredly, and vowed that it was a genuine compliment to him. He had written the novel, he said, in his youth, and then had settled to more serious literature.

INTERESTING VOLUMES.

The Largest, the Smallest and the Most Expensive Book Published. The largest bound book ever made was owned by Queen Victoria, says the New York Sun. It weighs sixty three pounds and is eighteen inches thick.

For the Hebrew bible in the Vatican in 1512 the Jews offered Pope Julius II. its weight in gold—\$100,000; but the pope would not part with it. More expensive even, if not more valuable, is the official history of the war of the rebellion issued by the United States Government at a cost of nearly \$3,000,000. Nearly one-half of this amount was paid for printing and binding and the rest for salaries, rent, stationery and such expenses as

table envy, general belief that a kind Providence had called the people of this land to dwell in a pretty good place. Would an English novelist visiting America now so write?

Yet if Americans to-day were called on to occupy the houses that satisfied in 1850 they would deem themselves ill used. In New Haven wages are nominally four times higher than sixty years ago, and measure in purchasing power twice as high. The average American stomach is filled with more and better food, and the average American back is covered with finer raiment.

It is the spirit rather than that with which the spirit exercises itself which has changed for the worse. It is now almost unfashionable to praise America, as formerly it was deemed unpatriotic to have any doubts. Jefferson Brick was a most ridiculous person, but when he disappeared something of great value tended to go out of American life.—New York Globe.

BUCKET SHOPS.

MAINTAINING a stock-gambling office—in other words, a bucket-shop—is an offense against the United States laws. A bucket-shop is a place where men make bets that the price of a stock will rise or fall by offering to buy so many shares at such a price, or offering to sell a similar amount at a similar price. There is no expectation of buying the stock or of selling it; but the forms of such legitimate business transactions are observed, and innocent people who desire to invest their money are thereby duped into doing business with such places. They usually lose all the money they invest.

The Attorney General has lately secured indictments against a group of men who have maintained 250 such gambling offices in various parts of the country, and he has announced his purpose to prosecute them to the full extent of the law. It is confidently expected that he will succeed in stopping their business as his predecessors under other laws stopped the Louisiana lottery. When the power of the national government is directed against any such evil as these it is much more effective than when a single State or a single city attempts to purge itself of offenders against the law.

The extent to which the bucket-shop business has been developed is almost incredible, and the machinery devised for entrapping the unwary is shrewdly constructed. Not only did the bucket-shop operators do their business, nominally as "stock brokers," but they maintained an organized stock exchange, on which enough legitimate business was done to make a showing of honesty and fair dealing.

But the chief patrons of these places were nothing but gamblers. They did not want to buy or sell anything, any more than does the man who bets on which lump of sugar a fly will next light. The proprietors of the places allowed their patrons to win only enough to keep them interested, but by a system of secret wires secured advance information from the legitimate stock exchanges which enabled them to prevent any customer from forcing them to lose.—Youth's Companion.

purchasing records from private individuals. It was ten years in the making, consisting of 112 volumes.

A set of 5,920 volumes in the Chinese department of the British museum constitutes the largest book in the world. It is an encyclopedia of the literature of China from 1000 B. C. to 1700 A. D., a period of twenty-eight centuries. The work in England was purchased for \$6,000, being one of the three copies in existence. It was forty years in compilation and was ordered by Emperor Kang-he, who reigned from 1662 to 1722.

The smallest book in the world, not much larger than a man's thumb nail, was made in Italy, the text being a letter, before unpublished, written by the inventor of the pendulum clock to Mme. Christine of Savoy in 1665. It is four-tenths of an inch long, a quarter of an inch wide, contains 298 pages, each with nine lines and from ninety-five to one hundred letters. Next smallest is an edition of Dante's "Divine Comedy," a little less than an inch wide, with type so small that it takes a microscope to read the letters.

three or four inches of the shank or shaft. How the plant is known botanically, or whether it is known at all, I am unaware, but it bears a purple fruit, quite the shape and about the size of a small olive, which I understand is not itself poisonous.

So armed, the Wanderboob tackled and killed anything, from the tiniest buck up to elephant, their favorite tactics a silent shot from a brush shelter built within five or ten yards of a much-used watering-place. Such primitive shooting covers one sees daily above springs and along streams in mountains and plains of the Wanderboob country.

This particular arrow-head the old bull carried would plainly have gone much deeper had it not struck a rib, for as found, the thin head was bent almost to right angles with its shank by contact with bone.

That it was a very old wound was obvious, for not only had it entirely healed, except local irritation about the head, but in places where the hard enamel-like coating of the poison was worn away the shank was much rusted.

THE OLD POISONED ARROW.

The famous poisoned arrow of the African savage is not always so deadly a weapon as it sounds. In fact, it may be absolutely harmless. After having killed an old buffalo bull near the Nile, says the New York Sun, B. Bronson in his recent book, "In Closed Territory," he noticed a small black shaft about the diameter of a slate-pencil standing perpendicularly out of the animal's right loin, near the spine, and six inches in front of the hip. One of the natives said, with a laugh, "Other hunters have been out long before you, Iwana, but their reas (cartridge) was not as good as yours; that is a Wanderboob poisoned arrow."

It was true, as we found proved, when, after five minutes' cutting and tugging, the arrow-head was withdrawn from the bull's tough back muscles.

It was a remarkable example of the great power of the Wanderboob bow. From its sharply barbed point to its base the arrow-head was five and a half inches long, and four and a half inches of its length had been driven through the half-inch hide and on into the heavy muscles of the loin.

Since it stood perpendicularly in the loin, it must have been shot into the bull while he was passing beneath a tree, or when he was drinking directly below some overhanging bank, both methods of attack favorites of the light-armed Wanderboob.

While the Wanderboob poison is deadly to beasts within five to twenty minutes when it is fresh, applied to arrow-heads in this dry climate, it takes to the hardness of enamel in a few weeks and becomes harmless. Luckily for the old bull, it was evidently such an old disencumbered arrow that had, perhaps by mistake, or as the last in the quiver, been driven into him.

The poison is made from the bark of a bush much like a laurel, which is boiled down and down until it becomes a thick, gummy, concentrated extract. So prepared, it is thickly smeared over the barbed head and

FARM NOTES

A General Purpose Poultry House.

This building is 14 feet wide, and can be as long as desired, adding another set or sets of rooms and sheds at one or both ends. The construction is simple, but durable. Outside walls are covered on outside and inside with light weight prepared roofing, placed on cheap lumber. Plaster board may be substituted for the inside. Studs are 2x2, and there are two sets; waterproof paper being placed between them. Thus a double air space is secured. Rafters are of 2x4, and may be stripped beneath and practically the same construction used for the sides; using thicker roofing. So constructed, the building will be very warm.

Foundation is of stone, brick or grout. Floors are of cement, covered with dry sand. Broken stone, well tamped as for macadam road is cheaper than cement, and makes a fair substitute. The ventilators, being placed in the warmest parts of rooms will draw. Windows have sash



EXTERIOR VIEW OF POULTRY HOUSE.

with some glass, but mostly filled with heavy muslin. This lets in a fair amount of light, and air enough to prevent dampness. By using two courses of cloth it will be fully as warm as one of glass, and insure a dry building.

One room has a double row of nests, with wire partition above. When a hen wants to set, her nest is pushed through into small room, and

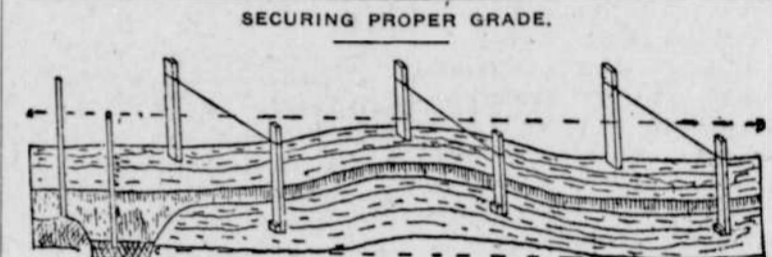
Good to Horses.

If horses had means of expressing their thanks they would probably unite and send a resolution of gratitude to the Pennsylvania man who invented the horseshoe shown in the sketch. The horseshoe has a series of parallel ridges on its heel and toe portions. The ridges on the toe portion run parallel to the longitudinal axis of the shoe and those on the heel portion run transversely. These ridges form a series of recesses adapted to receive and retain snow or dirt; thus forming a bearing surface for the shoe and making the horse surer of his footing.

Running in opposite directions as they do the corrugations act as a sort of brake in whichever way the animal's feet may happen to slip and the whole effect is to prevent snow or dirt "caking" on the flat of the shoe.

Bran with Alfalfa for Cows.

At the Massachusetts station, with new milk cows, a supplementary ration of bran gave slightly superior results to one of alfalfa meal. With the bran ration the cows gave 1.6 per cent more milk and 3.1 per cent more butter. The several feedstuffs were figured at the same price per pound, excepting the wheat bran and alfalfa; the former cost \$22 and the latter \$30 a ton in the market. On this basis the alfalfa ration would increase the cost of milk and butter some 9 per cent. If the bran and alfalfa were figured at the same price per ton the food cost of the product would vary very slightly. Owing to the excess of fertilizer ingredients, especially nitrogen, in the wheat bran, the bran ra-



SECURING PROPER GRADE.

To obtain an even grade in trenches where tiles are to be laid, stretch lines across the ditch five feet above the bed. The lines are tied securely to stakes on either side of the ditch. White cotton rope one-fourth inch in diameter is the best kind to make easy sighting. The proper hitch on the stakes is shown in the lower illustrations. In practice a mark can be made on the long handle of the shovel five feet from the point and the sighting done without delay as the work goes on.

replaced by the one opposite; the door being closed. A small door leads to an exercise yard. Partition door is open, except when raising chickens. Scratching sheds have earth floors, and are enclosed by wire fencing, with doors. In winter muslin can be added, making the sheds warm, and not excluding the sun.

The brooder room has a wood floor. Beneath is a basement for incubator. By a stove in room above and the double fly chimney both can be kept at any desired temperature, and the air pure. A trap door covers stair-aisle. Basement has windows on both sides. Entrance is from north, while south side is taken up by yards.—Farm, Stock and Home.

The Joe Strawberry. The Joe strawberry has had quite extensive trial and everywhere made a good record. It is a mid-season to late berry, and under favorable conditions grows to the

largest size. One berry is recorded as weighing more than two ounces. The plant is large and very vigorous and healthy in growth. The berry is regular in shape and among the most beautiful in general appearance. It is also of high flavor. If you have a heavy, rich soil and will mulch the plants well, you can raise some prize-winning berries from the Joe.—Orange Judd Farmer.

Sowing Cowpeas. The cow pea is sometimes sown in combination with other crops, such as corn, Kaffir corn and sorghum, for hay. When planted in these combinations there is danger of the cowpeas becoming stunted in growth if the crop with which it is combined is planted too thick. Sown broadcast, cowpeas often make little growth with these crops, but when planted in rows with corn and cultivated the growth is quite satisfactory.

Practical Poetry. "Pa, here's a piece of poetry that says something about a 'moated grange.' What is a 'moated grange,' pa?" "Lemme look at it. I guess that must be a misprint for 'garage.' A moated garage is one that's designed for motors. That's it.—Cleveland Plain Dealer.

Weight of Feeds by Quarts. Dairymen especially will be interested in knowing the weight of the several feeds by quarts, inasmuch as in compounding dairy rations, the terms are expressed in pounds: Cob-son seed oil, 1.5 pounds; linseed meal, 0.67 pounds; gluten meal, 1.2 pounds; wheat bran, coarse, 5-10ths pound; wheat middlings, coarse, 8-10ths pound; wheat middlings, fine, 1.1 pounds; mixed wheat feed, 6-10ths pound; corn meal, 1.5 pounds; oats, 1.3 pounds; rye bran, 8-10ths pound.

Limiting the Flock. Where the farmer himself works with poultry as he does with hogs or cattle, 200 hens should be the minimum limit of the flock, and more than this number can be handled with profit if the farmer understands the business and has some hired help. Both eggs and market poultry are very high and any farmer can make as much or more from poultry as he can with any other farm animals, if he puts thought and work into the business.

Milk for Poultry. Poultry and dairy farming go well together. Milk fed to poultry in all forms, produces good results. However, care should be taken to keep the dishes clean and sweet.

Average Yield of Oats. According to the Crop Reporter, issued by the United States Department of Agriculture, the average oat yields per acre for ten years were as follows: Russia, 19.4 bushels; France, 28.1; Austria, 28.6; United States, 29.8; United Kingdom of Great Britain and Ireland, 44.7; and Germany, 47.3. The three great crops of wheat last year were: United States, 807,156,000 bushels; Germany, 530,131,000 bushels; and Russia, 834,502 bushels. The world's crop was 2,560,524,000 bushels, and in excess of either corn or wheat

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