

## AGRICULTURAL.

### Old Apple Orchards.

Who does not remember the apple orchards of their youth? They are a part of the old home. Like old friends and old faces, they are inseparably connected with the days we spent upon sunny hillsides, when the air was redolent with their bloom, or the long winter evenings at home, fragrant with the crisp and spicy fruits. A few of the old trees are standing yet in places about the old homestead, where generation after generation have eaten of their fruit, loved and revered their worth, and may be passed away while the old ancestral trees themselves remain. Like the old people, they should command our highest consideration—our tenderest love and care.

That "they are of no use," according to the verdict usually rendered as the axe is laid at the roots of the time-honored trees, we do not believe. Why not help them to new life, new blood, and a renewal of vigor, not impossible to their old age? We cannot afford to do without them after all, for often they will bear us fruit equal to, if not exceeding in merit, the much talked of new varieties. But how?

In the first place, we want to break up the tough old sod about the roots and let in some of the blessed light and air so necessary to our own well beings. Then we want to give them plenty of enriching material—for they are well-nigh bloodless from long starvation—heaps and heaps of manure. One need not be afraid of overdoing that part of the treatment, for we cannot if we try.

We must trim out all the old and decayed branches and give them a neat and tidy appearance. It will be like a miracle when in a season or two the great rosy apples hang gloriously, or lie in heaps once more—a sight much talked of but not seen before by the youth of the family—while the rich flavor of old-time fruit is again enjoyed by the older heads.

It is a pity that so many of our old orchards have been almost denuded of their tenants by the hasty conclusion of some over-zealous wielder of the axe, who hated the sight of the decaying trees which bore no fruit "worth picking up," yet were starving from the grossest neglect. Some rare old kinds have been completely exterminated by this means, and these of a later planting, equally poor as to fruit-bearing qualities, are languishing under the same vile treatment, or rather from lack of any treatment. It is a grave mistake to allow an orchard to become an old sod pasture, destroying the trees to gain a small amount of pasturage or of the hay it may afford. The ground must be frequently stirred about the roots to insure ample crops and good fruitage, while full manuring is indispensable.

It is from high culture alone that we can ever hope for large, perfect fruit and plenty of it. We must not be over hasty in condemning our old apple orchards, because of decay or non-productiveness, until we have thoroughly assisted nature in reproducing such fruit as our fathers and mothers used to eat under these self-same trees, or some like them.

It is a plea for the old orchards that we are making—a plea for the new life, new vigor and new yield which a little care, some expense and not a little good common sense would bring out of the patriarchs of old, left yet standing, but half condemned. If old orchards long in sod are to be plowed the plow should run very shallow, for the feeding roots are near the surface and would be badly torn up by deep plowing.

### Pithy Points.

It is not a cardinal sin for a farmer to go into debt. If you can improve your farm so that it will grow better crops, it will often pay to borrow the money to do so. But never borrow money for frivolous uses. A farmer cannot often afford to fool with a fast horse. The speedier the animal the more rapidly will it carry them toward bankruptcy.

Speaking of bankruptcy, the failures in agriculture are fewer proportionately than in any other branch of business. This is worth considering by men who like to be on the safe side.

All public work should be done in a systematic and business-like manner, and paid for out of the general or special taxes. When our road work is conducted upon this basis we may expect to have better roads.

Good roads would make it possible to run many creameries through the winter which now have to stop as soon as the weather becomes bad. The loss thus occasioned is not easily calculable.

"A little farm well tilled" is a phrase that sounds well, and it has more meaning than most smooth sounding phrases. It conveys a lesson that is worth heeding.

Of course it is highly desirable to have good land; but much land gets a bad name because it is not properly tilled. Is it possible that such is the case with your field that has been giving poor crops?

After the ground is ready for working, valuable time should not be wasted repairing fences or mending implements. Get these things finished before time for the spring work to begin.

A good drain is a basis for several things. It is at the bottom of good roads, and of large and regular crops. Money put in a drain is better than in bank.

Do not cultivate two fields side by side with the same crop. Take down the division fence and run your furrows across both and you will save much labor.

If you cannot make money growing grain crops, then seed the land down to permanent meadow and pasture. It will at least be difficult to lose money that way.

The silo affords means for feeding the corn crop with the greatest economy. By building one you can at once increase the earning power of the farm.

### Horticulture.

Greediness, in fruit culture, often overreaches itself. If you really want a good and profitable crop, thin the fruit vigorously as soon as it is well set.

Irrigation is about the best method of insuring a good garden. Sometimes you can accomplish this by means of a windmill and secure a good profit on the outlay.

No man should engage in horticulture who is not pre-disposed toward intensive methods of cultivation. Success in this line never comes from slipshod measures.

In growing strawberries, the first thing needed to make the business profitable is

to have big berries. It costs less to produce a given amount of these, less to gather them, and they sell for more money than the small ones.

Currants and gooseberries are two of the most profitable small fruits. Keep the worms off and you are pretty nearly sure of a crop every year.

### Stock.

The recent development of the trotting horse is a valuable object lesson. There is no branch of our live-stock but that can be improved in equal ratio if we will devote equal care to the task.

It is a fortunate thing that the improvement of stock and a gain in profits go hand in hand. Otherwise we should find few men sufficiently devoted to good stock to spend much time or money on it.

Unless you know how to feed it will not profit you that you have much to feed. There is as much in combining properly as in giving out with a liberal hand.

Some men would like to increase the dairy qualities of their herd without increasing the size so much as would follow from the introduction of Jersey blood. For these, the use of Guernsey bulls would about fill the bill.

If the farm is really poor, sheep are the most profitable animals you can put upon it. They will earn something and make the land better at the same time.

Stock make a profitable adjunct to the farm, when the farm is overstocked. But that condition is quite as bad as the reverse.

When you bed the stock well, you make several good points. You promote their cleanliness, comfort and health, save labor and add to the manure supply.

There is not very much difference in the cost of growing a colt and a steer to the same age. But there is a wide difference in their value—that is, if the colt has been properly bred.

If you are near a good market, grow sheep for mutton and for early lambs. There are not many ways in which a small stock farm can be farmed to better advantage.

It may not have occurred to you, but the hog gets out of condition easily if compelled to exist amid unsanitary conditions. Then cholera and all other evils follow in due course.

There is no such thing as stock "just holding its own." Unless it is making some definite gain you are certainly losing the feed that you give it.

It is not the amount that the animal eats, but what it digests and assimilates that makes the profit. The proper combination of food is needed to secure this.

If you wish the dairy as a whole to pay a better profit you had better open an individual account with each cow. That will show you where the drosses are so that they can be weeded out.

### Poultry.

Soiled eggs are never inviting, nor do they command the best price even if warranted fresh. But you cannot have clean ones unless you have clean nests.

Let the fowls have a run in the fresh air every day, even if it is frosty. Scatter grain outside the house and make them run for it. Exercise and fresh air are necessary for their health.

### Chinese in Africa.

The Chinese have just been introduced for the first time into tropical Africa as laborers. Last month a steamer landed 540 coolies at Matadi, the head of navigation on the lower Congo. For some time the Congo Free State has solicited the favor of the Chinese Government in behalf of importing Chinese labor into Africa. The authorities of the empire declined at first to countenance the proposed emigration, on the ground that the Congo is too unhealthy to be a desirable field of labor. Conditions of life on the Congo, however, have been changing. The comparative mortality among the whites along the river is fifty per cent. less than it was six years ago. Comfortable houses are erected for the use of all foreign employees of the State. The conveniences of civilization have multiplied. Medical service is gratuitously provided. Sanitary and hygienic conditions are better understood. The Congo basin is becoming a more tolerable abiding place, and the leading white men there declare that their stations are as healthful as most of the places where Europeans live in India. These facts have at last prevailed with the Chinese Government, who have promised that if the first experiment of importing Chinese labor into Africa is successful, no further objection will be raised to the emigration of Chinese to the Dark Continent. Not only the Congo Free State, but also other powers see, therefore, the prospect of a good supply of cheap labor for their African enterprises. The Chinese on the lower Congo are now grading the railroad that is building between the lower river and Stanley Pool. This enterprise has been making fair progress with the aid of about 2,000 native laborers. It is impossible, however, in their present stage of energy, to secure from the natives anything like a day's work in one day. As they are gradually trained to habits of industry they accomplish more; but it will be a good while before they can be depended upon for such service as is expected of workmen in civilized lands. It is likely, therefore, that the Chinese now digging on the Congo Railroad will accomplish nearly as much as the native force, which outnumber them four to one. The experiment, will be watched with interest. If it succeeds it will be a great boon to Africa; for what white interests require there more than anything else is a large supply of good cheap labor.

### Made Him Nervous.

Bystander—"Don't you feel terribly nervous when you are way up in the air?" Parachute Jumper—"Yes, if there's a small crowd."

"What difference does the crowd make?" "I'm afraid I won't get my salary."

### After Sunshine.

Mrs. Upton—"My dear, we'll have to go to Florida."

Mr. Upton—"Florida? We are all in good health."

Mrs. Upton—"Yes, I know; but bought a perfectly lovely parasol at ch asu bargain to-day, and it will be out of fashion before spring."

## EARTH, SUN, AND STARS.

### Wonderful and Interesting Facts from the Late Prof. Proctor's Latest Work.

Modern astronomers have not neglected the earth. They have not only measured our globe—they have weighed it, and the tonnage takes twenty-one figures for its expression. That is to say, the sum total goes into the middle of the trillions. Then follow the measuring and weighing of the solar system. Light, proceeding with ten thousand times the velocity of the earth in its orbit, gives us some idea of distance, when we learn that its flight from the sun to our globe occupies rather more than eight minutes. Sound travelling in air, would require above fourteen years to accomplish such a journey. Considered, as a luminary the sun has an intrinsic lustre between three and four times greater than that of the electric light when the latter is at its brightest. The molten metal in a Bessemer converter is 5,000 times fainter than the light of the sun. As for the solar heat, its production appears to be yet somewhat of a mystery. If the sun were all coal, and that of the best quality, the entire mass—if emitting the heat now sent forth—would be burned up in less than 6,000 years. Nevertheless, we are told that the sun may be depended upon for a few millions of years in the future, though not for tens of millions. We may accept the lesser period as sufficient for ordinary purposes, although the sun is likely to be of little service for some time before he quite goes out.

In relation to our great luminary, as well as to celestial objects generally, the spectroscopic and the photographic camera have proved invaluable adjuncts to the telescope. They have rendered special assistance in elucidating the real nature of the rose-tinted border of light, and the red prominences bursting forth from it, seen to encircle the sun at the time of a total eclipse. The very existence of these prominences was the subject of doubt down to 1842, and in some degree, even as recently as 1868, when spectroscopic analysis was first applied to their examination. But now we have absolute proof that the great globe of the sun is surrounded by a deep layer of colored matter, whence enormous protuberances start out, composed of glowing gas, principally hydrogen, the radiant columns attaining, in some instances, to such a height that ten of our worlds might be piled, one upon another, within the mass, and yet fall short of the summit. In 1839 photography was first employed to secure views of the corona, the aureole of light which is seen to surround the sun during a total eclipse. The inner corona is considered due to the presence of tenuous and diffuse gases, varying from time to time in their luminosity, and raising to a height of about three hundred thousand miles. But there is an outer corona of much greater extent, apparently connected with meteoric and cometic matter. Further away still we have the zodiacal light, seen in this latitude as a slanting column in the western horizon after sunset in the spring of the year.

Passing from the sun's immediate surroundings, we are introduced to the region where it has been thought possible for a planet to circulate which has not been detected. The idea has been founded on certain unexplained irregularities in the movements of the planet Mercury. But the existence of the hypothetical Vulcan is now discredited, and the peculiar motion exhibited by the orbit of Mercury is attributed to the presence, between that planet and the sun, of multitudinous small bodies, individually invisible. Some of these may be of several tons, or even hundreds of tons, in masses; yet, considered with reference to the enormous region they occupy, they are but as planetary dust. Speculation has also been rife as to whether Veaus has a satellite, and although proof is wanting, observations are on record which make denial difficult.

Our own planet may be studied in detail. The history of the earth is measured by millions of years, and Mr. Proctor has ventured to predict millions of years to come, unless some catastrophe intervenes, of which there is "no sign or likelihood." Looking back, we may at least be thankful that certain past ages of the earth are gone forever, including the era when a fiery atmosphere, laden with destructive vapors, burst forth in tremendous storms, while maleficent clouds discharged torrents of hot water, mixed with sulphuric acid and other corrosive compounds. It is well that the gigantic insects of a later period no longer exist, and that the glacial visitations are for the present suspended. But, in the absence of any catastrophe, the earth's decay is an assured fact. The water supply, including the volume of the seas, is destined to diminish, though any serious deficiency will not accrue until the time of earth's "extreme old age." The action of the tidal wave is apparently reducing the rate of the earth's rotation, making a longer day. The action must be very minute, yet if it is real the effect will be palpable enough after the lapse of millions of years. In addition to this, there is warning given that artificial processes are exhausting the earth's stores, and if man continues to use up the materials at his command at the same rapidly increasing rate as in recent times, it is possible that in a few thousand years, instead of millions, the earth will be no longer habitable by civilized varieties of the human family.

The orbit of Neptune, thirty times further from the sun than that of the earth, forms the outer boundary of the solar system. The distance is immense, yet shrinks into insignificance compared with that which lies beyond. So vast is the gulf which intervenes between our earth and the stellar universe, that although many of the stars are, in all probability, larger and brighter than our sun, and some very considerably so, yet the most powerful telescope is not able to give them any appreciable diameter, a mere point of light being all that is visible, even when the great Lick telescope is directed to the brightest among them. This of itself does not prevent the determination of distance, but in only a few cases has there been an approach to an actual estimate. The least extent runs into billions of miles. Some notion of the reality may be derived from the fact that if our sun were removed to about two hundred thousand times its present distance from the earth, it would appear to us simply as a star of the first magnitude. The distance in such a case would exceed nineteen billions of miles. It follows that if the nearest fixed star is further off than this, as appears to be the fact, every star of the first magnitude must be larger or brighter than our sun. According to one reckoning, our sun seen from the distance of Sirius would appear as

a star of the fourth magnitude. Sir Robert Ball, ascribing to Sirius a distance of one hundred billions of miles, states that the sun would be altogether invisible from such a range, its apparent size—if it could be apparent—being reduced to that of a half-penny seen sixteen hundred miles away. A strange hypothesis presents itself in the argument for the existence of dark stars. Mr. Ranyard calculates that a dark body, equal to the sun in size, and only six hundred times more remote, would probably be overlooked by our astronomers. Thus we may have an invisible universe, in addition to that which meets the eye. The star Algel is known to have a dark companion, and there may be other dark orbs in space. The extent to which movement has been detected among the so-called fixed stars is a notable achievement in astronomy. In one instance a star is estimated to proceed at the rate of sixty-seven miles per second or even one hundred miles. Our own sun is a star, travelling through space, with all the attendant planets, at the rate of eighteen miles per second. There is, accordingly, a chance that in four hundred and fifty thousand years we shall come abreast of the Milky Way, and in a similar space of time pass through it, so as to view things from the other side. Something more will then be known about the nebulae than we can now determine, though it is hard to say what may happen in the interval.

### The Uses of Electricity.

The enormous strides made by the new force in commerce and industries of late years have been to a certain extent paralleled by the application of electricity in medicine and surgery. The electric motor turns the drill of the dentist, bores out all the noes of mankind in the hands of the rhinologist, and may run the saw and the trephine of the surgeon. The electric light is made to illuminate all the cavities and interiors of the human body, so that "the pestilence that walketh in darkness" in the black recesses of our viscera is sought out and driven away by the electric search light. It is nothing now to put an endoscope into the stomach and scrutinize its walls from one end to the other, and in a dark room the very size of the stomach is determined by the transillumination of the abdominal walls when a light is turned on inside of that viscus. Electricity furnishes heat for the cantery, with which morbid surfaces may be healed, wounds stimulated, and tumors extirpated. The electrolytic needle removes the hairs of the bearded woman, radiates birthmarks, decomposes tumors, coagulates aneurisms, and in its most romantic role manufactures those most desired ornaments of the feminine physiognomy, lovely dimples. The electro-magnet pulls out the beam from our neighbour's eye, when the beam is in the shape of a piece of iron, and when the operation is intelligently directed by the ophthalmologist. It may hunt up and draw out wandering needles. One of the new features of electric medication is the introduction of drugs into the human body through the skin. This is done by placing solutions of any drug upon a sponge, which is made the positive pole and placed against the skin. When the current is turned on the drug is actually driven through the skin into the tissues. The application is not at all painful. Thus cocaine has been driven in over a painful nerve, and neuralgias have been relieved by it. Many other drugs have been used in this way. This property of electricity is known as cataphoresis. Operations have been performed after anesthetizing the skin and subjacent tissues cataphoretically.

The neurologist perhaps finds a large therapeutic field for electrical exploration. With the continuous current he soothes the pains of peripheral nerves, calms down an excited brain, stimulates healthy processes in a diseased spinal cord, exercises paralyzed muscles, rejuvenates overworked limbs, and aids in the rebuilding of tissues in members that have wasted away. Sometimes he calls in to his aid the interrupted and the alternating currents, and occasionally takes into service the static sparks evolved from his big glass wheels and Leyden jars. The method of the working of electricity in disorders of the nervous system is much more obscure than in the maladies mentioned above, where heat, light, electrolysis, and cataphoresis produce effects at once apparent to the senses. Not able to demonstrate objectively the value of electricity in some of the chronic nervous diseases, a great deal has to be accepted on faith. There is dispute in some quarters as to its intrinsic value here, and many incline to the idea that suggestion has a good deal to do with improvement in patients of this kind treated in this way. Besides its employment as a therapeutic agent, electricity has considerable value as a means of diagnosis in many neurological conditions. For instance, the resistance as measured by the rheostat is reduced in ophthalmic goitre and increased in hysteria. The muscular contractions produced in paralysis from injury to certain parts of the nervous system are so different from contractions produced by electricity in paralysis due to lesions in the brain, as an example, that their differentiation constitutes an important aid in distinguishing these affections one from another. Then, too, in the surgery of the brain and spinal cord which has newly sprung into existence, electric stimulation of parts of the brain and of nerve-roots is very valuable in localizing the exact region to be operated upon. Indeed, much of our knowledge of the localization of functions in different parts of the surface of the brain is owing to electricity made use of by physiologists in their marvellous experimental researches in cerebral domains. Altogether electricity occupies an extensive place in the armamentarium of the physician. All parts of the human economy are explored by its magnificent light, and there is no cell so secretly hidden that it may not be influenced by this wonderful force which may be made to penetrate skin, muscle, bone, blood, nerves, and viscera. No one can yet place a limit upon its possibilities as a remedial agent, for each year new apparatus, new devices, new forms of current, and new methods are made available to the medical profession in its noble warfare against the diseases which assail mankind on every hand. It is not vain that men have sometimes looked heavenward for aid in sore affliction, for has not the lightning been drawn from the clouds to become his friend and heaven-born ally?

A Mexican street car can be hired for personal use for \$3.50 a day, with a right to stop at any one place for two hours.

## WAR ON THE ARABS.

### The Congo State Sends a Small Army Against the Slavers who Killed Hodister.

The Congo Free State has just started an expedition to punish the Arabs of Nyangwe who killed the Hodister party last spring and destroyed several trading stations on the Lomami and Congo rivers. Lieut. Dhanis, commander of the station of Lusambo, on the Sankuru River, leads the expedition. It is sent chiefly against the great Arab leader Munnie Moharra, who was at the bottom of the war against the whites last spring. Moharra, who almost rivals Tippu Tib in the extent of his influence, denied to the commercial agents of the Katango syndicate all access to the regions which he controls and ordered the massacre of Hodister and his companions. The Congo Free State has decided that it must thoroughly punish the powerful Arab of Nyangwe or entirely give up the country to him and the chiefs he controls. As things now stand these Arabs wholly control a region as large as France, and no white man can safely enter this territory.

The Congo State recently engaged 500 Abyssinian soldiers, who were landed at the mouth of the Congo two months ago. The State also has 3,000 native Congo troops. The Abyssinians and a considerable part of the Congo force are to take part in the expedition against Moharra. Sefu, the son of Tippu Tib, who commands the Arabs at Stanley Falls, has gone to join Lieut. Dhanis, and will march with him against Moharra. Another Arab chief, Kibonze, who has had trouble with Moharra, is also preparing to attack him in conjunction with the whites.

While the Congo State is about to take measures to repel Arab slave and ivory hunters in their Eastern territory, the Anti-Slavery Society of Brussels is taking steps to send reinforcements to protect its station on the western shore of Lake Tanganyika. Capt. Jacques, at last accounts, was in a perilous position at Albertville, the station founded at the mouth of the Lukunga River. Rumaniza, the powerful chief of that region, and the ally of the Arab Moharra, is making war on the whites in that neighborhood because they are interfering with his slaving operations. It looks now as though battles would soon be joined all along the line in Central Africa between the Arab slave dealers and the white enterprises that are inimical to the slave-hunting Arabs.

### Labor Strike in China.

There is an impression in America that strikes are unknown in China. My experience is quite to the contrary. The Chinese have invented the mariner's compass, gunpowder, and strikes, but the only one of the three which they have developed fully is the art of striking. Whenever they want anything they ask for it by announcing a strike. I did not appreciate at first the importance of their feast day, and when the first one came around they not only struck but 200 of them came up and mobbed my house. No violence was attempted, but the interchange of views was like the chattering of 10,000 monkeys. I yielded. The miners would strike if they did not like their shift boss, strike if they had a bad dinner in the company kitchen, strike for any reason.

Once, when mine, mill and furnace were in full blast, the miners all struck for some insignificant cause. Tired of expostulation, I sent for the head men and told them gravely that I had no objection to the strike if the men wished it, but the mill and furnace could not stop. They had to go right on and it was very costly to keep them at work without ore. I said that I did not think it was right to make the company pay the loss, and that I should fine the workmen three days' pay for every day they were off duty. There was a great hubbub. The miners came to know if what the head man told them was true. They went to work the next day, and striking was free in that mine ever after, but each man paid for his own fun. In the end, however, they devised a more potent mode of warfare. They went into the mine with delightful regularity. They put in their time, but did not put out their ore, and our product fell off 75 per cent.

### African Maps.

The British and Germans might have saved themselves some trouble if the maps of the African lake region had been a little more accurate. When Speke discovered Victoria Nyanza he heard of a great mountain, known as Mfumbiro, to the west of the lake, and, as near as he could tell from native reports, a little south of 1° south latitude. Until a short time ago the mountain was shown on the maps as Speke represented it. When the British and Germans signed the treaty of 1890, defining their respective spheres of interest, they declared that the parallel of 1° south latitude should be their common boundary from the east coast of Victoria Nyanza to the Congo Free State. The British, however, coveted the big mountain their explorer had heard about, and so this clause was inserted in the treaty: "Mount Mfumbiro, however, shall pertain to the British Sphere; and if it is found that the mountain is situated south of 1° S. Lat. the boundary at that point shall deflect so as to encircle the mountain on the east, south and west sides, thereby including it within the British Sphere of Interest." Until a few weeks ago the boundary was shown on the maps as swerving around the mountain. Now it takes a bee line along the first parallel for a very excellent reason. Mount Mfumbiro is indeed south of the parallel, as Speke said, but he did not place it far enough west. It is over the border in the territory of the Congo Free State, and England is robbed of her coveted mountains.

### The Only Kind.

Practical Father—"I told you to oil the casters of that table so they would not squeak, but you have not done it."

Dutiful Son—"I couldn't find the castor-oil."

A letter writer in Australia speaks of a huge eel, which is sometimes met with in the lakes or large rivers in the interior of that country. His first introduction to them was somewhat original. He had been swimming near the shore in a beautiful secluded bay, and feeling fatigued seated himself on a log nearly as large as his body, which seemed to be resting on the pebbly bottom. Suddenly the log slipped from under him and moved gracefully away. It proved to be an eel 15 feet in length.