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Timothy Kelly, convicted of participation in the Phœnix murder was hanged at Kilmainham jail last Friday. He is the fifth.

"A millstone and the human heart are driven ever round: If they have nothing else to grind they must themselves be ground."

The Pennsylvania legislature has passed a bill prohibiting speculation in theater tickets. This is a measure which leading managers as well as the public would be glad to have become a general law.

After a hard fight in the Illinois legislature the Harper High license bill has become a law. This is a state measure, which will be in force in Chicago as well as elsewhere, and its practical effects will be watched with interest. The minimum charge for a license to sell beer is fixed at $150, and that for the sale of distil'ed liquors is $500; which figures may be increased by local authorities, if they wish. It is admitted, even by liquor sellers, to be a strong measure and one which will accomplish the purpose for which it was framed.

Merrick in his never ending speech in the star route trial has said a few good things. On last Friday in referring to Ingersoll's peroration in which he nailed Rerdell down in his coffin with seven nails, etc., Merrick said he would also do some burying. He would bury Dorsey alongside Rerdell, and his fellow-conspirators should be mourners over them. He would erect an arch, one end resting on the grave of Dorsey, the other end on that of Rerdell, and on the keystone should be written the epitaph: "They were delightful and lovely in their lives, and in death were not separated." And if, notwithstanding counsel's prayers, Gabriel, when he passes over those graves, should blow, and corrupt and buried Dorsey should arise an immortal spirit and come into that last grand court, before the Great Searcher of Hearts, before whom we must appear, and the Great Searcher would ask him, "Were you not in the flesh known as Stephen W. Dorsey?" the spirit would answer: "I don't remember!" This was greeted by a furious burst of laughter, and even Ingersoll is said to have been considerably demoralized.

Misplaced Confidence.

The failure of the Bank of Breckenridge presents some aspects fully as regretable as those involved in the suspension of the Bank of Herman. The former was the depository of the funds of Wilkin county, the same as the latter was for Grant county, only that the bondsmen of the proprietors of the Bank of Brekenridge have not misplaced their confidence in the integrity of its proprietors and the stability of the institution to the extent of more than one-half the amount which has gone the way of all the earth through the medium of C. F. Washburn. If there is any one thing that stamps a man with the brand of perfidy, it is the involving of his backers, as it were, in financial complications into which they entered with no other motive than a spirit of accommodation, and without the slightest probability of gain. The business men of this village who signed the bonds to this county with C. F. Washburn where his business friends, though some were his uncompromising political enemies at that time said bonds were signed and delivered. While some of them questioned the beneficence of his political principles and methods, there were none who doubted that he possessed the first principles of business and moral integrity. Was that confidence so generously reposed, unjustly bestowed? In the light of the subsequent developments and the high financial and political standing of some of C. F. Washburn's relatives, we are not prepared to answer this question in the negitive. From a few circumstances which have been recently brought to our notice, we are inclined to the opinion that C. F. Washburn has pursued methods in the management of his trust and his business dealings with his relatives who have been furnishing him with financial sinews in the past, which will not bear the closest scrutiny. Some of these will no doubt be ventilated in the courts in a manner a like unpleasant to Mr. Washburn and some of his illustrious connections. We are not desirous to see C. F. Washburn pushed to the wall and still hope that he, himself, and those who are most vitally interested in preserving the good name of one of the most honored families in the United States, will "take the bull by the horns" and resolutely set about clearing up the prefidious features of the failure of the Bank of Herman. If it is not done, C. F. Washburn will find this community a rather warm place in which to live, and his name forever clouded with the record of transactions in connection with his banking venture at this place, which his natural cunning and innate suavity will be powerless to overcome.—Herman Herald.

GENERALITIES.

"Is anybody waiting on you?" said a polite dry goods clerk to a young lady from the country. "Yes, sir," replied the blushing damsel; "that's my fellow outside; he wouldn't come in the store."

An exchange says that a Bismarck man, who is learning to play the cornet, has picked up brick enough in the front yard, and on the balcony where he sits to practice, to lay a pavement all around his house, and hopes to be able to build a brick house this summer if the neighbors don't all move out of the ward.

A teacher defining a transitive verb as one that expresses an action which is "passed over" from the doer, gave for illustration, "the dog wags his tail." Whereupon a youngster arose with the criticism: "Please ma'am the action don't pass over; it stays in the dog,"—Boston Transcript.

The editor of the Key West Democrat is said to be only 40 inches high and weighs but 35 pounds. When the man with a club comes in to interview "the chap who wrote that article" the editor of the Democrat crawls into his paste-pot and pulls down the lid.—Ex.

It is proposed to change the name of Washington Territory upon her admission into the Union as a State, to Tahoma. This name is an Indian word, meaning "almost to heaven," and was given by the Indians to Mount Rainier on account of the great height of that mountain, which is 14,000 feet above the level of the sea.

FARM NOTES.

W. S. J. in *Country Gentlemen* says: I believe that it is eminently proper to trust to the animal's instinctive appetite for salt. We certainly have no means of knowing the amount of salt that the animal would require, but we know that the quantity they get in their natural state is very small, being only that which is held chemically in grasses, and what they obtain at their "licks." When we mix it with the food, they are compelled to eat the salt whether they require it or not. When they do not require it, there will be more or less danger done to the digestive functions. I have observed much, and have had a great deal of experience in salting animals, but I never have seen the slightest injury from allowing them free access once every twenty-four hours, provided they have not been deprived of it previously, as in that case they may take too much.

Farmers' wives, read this. During the first six months of 1882 there were nearly *seven million dozen* eggs, hen eggs, not ostrich or other fancy eggs, but hen eggs, imported into the United States. Now, as a matter of fact, the wives of our farmers, mechanics and country ministers ought to go into the egg business so thoroughly and so successfully that they can have all the fresh eggs they want in their own families, and have enough to supply all the bankers, merchants and other families in the land, and export the surplus product to the "down trodden" natives of Europe. The idea of a people with all our open country going to France or Belgium for eggs to go with our morning toast and coffee. We shall buy a coop of hens and start the reform at once. No eggs with socialism or Irish agrarianism in them for our breakfast. Tariff or no tariff, America must raise her own eggs.—Farmers Review.

I think if a greater profit is anticipated from keeping such extraordinary butter-producing cows, it will be found illusory. Even if we cast aside the greater risk of death from milk fever and some other diseases, and the extra labor and care to assiduously look after such animals, I am of the opinion that a herd of cows yielding over ten to thirteen pounds of butter per week during the best of the season, or 350 to 450 pounds per annum, would be found more profitable, in the long run, than a herd yielding much more than this; and especially if it doubled, as some breeders of Jerseys are now straining their utmost to accomplish.

For one, instead of favoring, I wish to lift up my voice against producing twenty pounds of butter or more per week: and it would be still better, in my opinion, to limit the quantity to fourteen pounds per week as the utmost that a cow should make. To obtain a larger product than this, as a general rule, I will say, she has to be highly stimulated with extra food, which throws the poor animal into a feverish state, and renders her milk and the butter made from it more or less unhealthy. Furthermore, it is notorious that the larger the butter product the more liable the cow is to be attacked by the very dangerous disease of milk fever.

Many complain that onions do not keep. The trouble is in keeping them too warm. The onion is a bulb—a plant at rest—and the least warmth starts it into activity. It is much better that onions should remain frozen through the winter, provided they can thaw gradually, than to be put into cellar or other warm place where their vegetative powers will be aroused. If put in large heaps onions will be sure to spoil: but spread in thin layers and covered with hay or straw, so that if frozen the thawing will be gradual, they will keep well through the winter. It is the custom with onion growers to get their crop to market as soon as possible. If they were to provide proper storage they would realize much more from them when sent to market later in the season.—Purdy's Fruit Recorder.

SCIENTIFIC MISCELLANY.

In the treatment of persons apparently dead from drowning or chloroforming the placing of the body is one of the first considerations. Various positions have been advocated by medical men, such as those of resting horizontally on the face, on the side, on the back, alternately prone and supine, inverted, sitting up, bent forward and bent backward. Dr. Eben Watson, of the Glasgow Royal Infirmary, has lately objected to the plan of inversion, as he finds it to be injurious, and recommends a supine and horizontal position. Dr. Henry R. Silvester, of london, has made some experiments which appear to teach that inverting the body has no advantages to offset its danger; but he contends from the results of his experience that the most suitable position is that of reclining on the back, the body inclining a little from the feet upward, the shoulders and head slightly raised and supported on a firm cushion. This position, he says, is favorable for the relief of congestion of the heart and head, while both sides of the chest are free to expand, and such conditions afford the best chance of restoration from apparent death.

In Ireland the leaves of the common mullein (*Verbascum thapsus*) are popularly supposed to be useful in cases of consumption, and Dr. F. J. B. Quinlan's observations lead him to conclude that they really tend to increase the weight of patients suffering from the disease in its early stages, while they greatly relieve phthisical cough. The remedy is administered by boiling the leaves in milk—in the proportion of a pint of milk to an ounce of dried leaves or a corresponding quantity of fresh ones—and given hot.

Mr. S. A. Stewart discovered last year that the common frog is unknown in the island of Rathlin, three miles from the coast of County Antrim, Ireland, although very abundant on the mainland. Frogs are supposed to be pretty well distributed throughout the globe, but Mr. H. W. Lett cites evidence proving that they were not known in Ireland until about two hundred years ago, when Dr. Guithers, a fellow of Trinity College, Dublin, introduced some frog's spawn from England. Even in the middle of the last century frogs were exhibited as curiosities in the north of Ireland.

Ferns, of which several thousand species have been described, formed a very important part of the earth's vegetation in early geological ages, as is apparent from remains brought to light in the coal fields. They now grow all over the world, but especially in the warm and moist climates. In the Antilles they comprise about one-tenth of the vegetation; in Oceanica, one-fourth or one-fifth; in St. Helena, one-third; in Juan Fernandez, one-half; and in England, one-thirty-fifth.

By a new method of application, Mons. Bert has safely used protoxide of nitrogen—or "laughing gas"—to obtain prolonged anaesthesia, a dog having been kept insensible for half an hour. Mons. Bert's plan is to cause anaesthesia first with the pure protoxide; then to give a mixture of the protoxide and oxygen, which restores to the blood its necessary oxygen; and in this way both return to consciousness and danger of asphyxia are obviated. A mask and two rubber bags are all the apparatus needed.

A man is "dead drunk," according to Savants of the Paris Biological Society, when the fluid which circulates in his arteries and veins contains one part of alcohal to one hundred and ninety-five parts of blood. Should the proportion become one part of alcohol to one hundred of blood, death must ensue. In ordinary cases the drinker loses consciousness before so great a proportion of alcohol has entered the circulation, but the fatal dose is sometimes taken when a large quantity of alcoholic liquor is swallowed quickly.

Dr. Diebenberg has found that the germination process of many plants requires the presence of lime in the soil, and that the seedlings die without it. There are some plants, however, which freely germinate when it is not present. It is known that the cinchona trees do not require lime, and it is suggested that the frequent failure in Jamaica of the seedlings may perhaps be due to the absence from the soil of some more essential ingredient.

During the four months of August to November last temperature records were kept at Markla, in the Siberian province of Yakutsk, by Mons. Pavloff, an exile. His report shows that winter approaches with great rapidity in those latitudes. On August 1 the thermometer rose at one o'clock P. M. to about 88 degrees Fahrenheit, and reached 57 to 68 degrees during the second half of the month. The first frost came in September, and in the first days of October the thermometer sank—at seven A. M.—as low as from 14 degrees above zero to four below; and as low as 22 to 30—and even 38—degrees below zero during the second half of the month. In November the temperature did not rise higher than 24 degrees below zero, and occasionally sank to 55 and 58 below.

Modern medical science is gaining a foothold in China. Miss Howard, an American physician, having been called upon to treat the mother and the wife of the Chinese Viceroy, Li Hung Chang, has become very famous among aristocratic Chinese ladies, who now flock to consult her. It is also said that the Emperor of China has arranged to educate a number of youths in European medicine and surgery in Hindostan colleges.

CORRESPONDENCE.

Eldorado.

We are still alive in Eldorado tho' at the time you so kindly enquired after our health we were so nearly worked to death, as to be unable candidly to say "Yes or No" to the query. And then the weather has been so very cold it took us all our spare time to keep warm. Instead of winter lingering in the lap of spring it seems to have fairly sat down upon it and nipped it out of existence. Crops are not promising as well as the early spring would lead us to expect. Present indications for oats are decidedly poor in comparison with last year. Wheat and barley look well. Corn has had a hard tussle with the cold but is peeping thro'. Garden stuff has just got a good hold and at present there is a gentle rain falling which will help greatly.

The Minnesota Farming and Lumbering Assosication are seeding about 300 acres to flax on Sec. 15. What used to be known as the Corning Farm. It is the only one of all the big farms of Eldorado which has bravely fought, and conquered the graceful Sun flower, and fragrant "Rosin Weed," and is now in a high state of cultivation. This proves that "perseverance gain the meed and patience wins the race." The new school house is completed with the exception of furniture, which it is to be hoped will arrive at an early date. The South Side scholars are rather at a disadvantage, as the present building. (That is where school is being taught now.) Is not conveniently accessible to all.

New York Times: The resolution in the Ohio platform in regard to the tariff favors a "tariff system which will provide a revenue for the government and at the same time will protect American producers and American labor," and it denounces "the Democratic doctrine of a tariff for revenue only:" it also declares that "the wool tariff of 1867 should be restored at the first possible opportunity." We presume that this is a fair statement of the views of the Republicans of Ohio, but it is not adapted to win vote, as a more moderate declaration might have done.

THE FAILURE OF SCIENCE.

A Scathing Criticism by Gail Hamilton.

[From the North American Review.]

Never again let this generation, at least, hear one whimper from science against religion. In the long warfare religion has often chosen her ground with stupidity, selected her weapons with ignorance, and wielded her forces with passionate feebleness; but she never made so pitiful a display and so futile a use of her resources as science made over the death-bed of President Garfield. When the question is of nebulæ, of atoms, of the rock's growth and the earth's age, of the spirit's substance, of life's origin, of the infinite in space, the inconceivable in time, the unknowable in eternity—science has it all her own way. We cannot bridge the chasm between mind and matter. No man hath seen God at any time to prove Him the Creator. From the grave no being has arisen to our eyes, and from the stars no voice comes to our ears to dispute whatever the wise men may say.

But here was solid ground for science to stand on and demonstrate her power. She had nothing to do with the remote, with the past, with abstractions. Before her eyes, under her hand, lay a human soul in sore strait—a human life hunted into the valley of the shadow of death, longing to come out again into the sunshine of the fair and open day. The whole nation, the whole world shared in the longing. Whatever love and wealth could proffer was ready to the hand of science. Everything that gratitude could inspire, everything that ambition could desire, lay in wait to reward the man who should conduct the august sufferer back through the gates of life.

And science accepted the trust manfully. The most celebrated and the most accomplished brought to that darkened chamber their highest knowledge with ever renewed and unwearying effort. The railroad and the telegraph were put under their control. No cost hindered any experiment or curtailed any care. The nation stood behind, not only permitting, but urging every expenditure of brains and money, to the same end, urged their own self-interest, patriotism and humanity. Day and night they ceased not to work and watch, and the result was—failure, absolute, thorough, undisputed failure—failure so minute and complete that only its terrible gravity kept it from being ridiculous, and not even its terrible gravity could keep it from being grotesque.

Science can spin the world back between her thumb and finger a billion years, and we go spinning with it because we cannot help ourselves. Science can locate the soul in the grayish matter of the brain, and we submit because we cannot dig deeper than that grayish matter to search for a deeper soul. But when science comes into a practical realm, where we can prove or disprove her accuracy, her keenest scent for truth, her finest touch of skill is to grope till the man is dead and then find the bullet in a wash-bowl. Nescience could do that. What availed science to Garfield? She never treated or touched the wound which the bullet made and which she was summoned to heal. She never even found it. She made two ghastly wounds herself, and for eighty days she clawed at them. The bullet which the surgeons could not find nature carefully encysted. The bullet-wound which they never touched nature safely and silently healed.

Surgical science is reduced to the pitiful claim that she alone kept Garfield alive for eighty days. This is a suicidal self-relegation to the unprovable. Routed on the tangible field of fact, she flees to the cloud-land of speculation, and again throws up intrenchments.

Nescience has precisely the same right and the same reason to speculate; take a man in perfect health, and give him into the control of surgeons, unwounded, and let them make two such wounds as Garfield suffered at his surgeons' hands, and let them bore into those wounds every day as Garfield's wounds were bored into—sometimes with seven different catheters of different sizes at a single dressing—and let them feed the man as Garfield was fed, and furnish him with the malarious air that Garfield breathed, and sequester him as Garfield was sequestered, and not one man in 10,000 would survive the horror of it for eighty days!

Savans, how dare you, in your limitless ignorance and impotence, tamper with our hope of immortality? You are as unable as the clown or the clod to discover the secret of physical life. With what shadow of reason shall you presume to annihilate spiritual life because its secret eludes you? The coarsest fanatic who can see God only on a tipping table does not display so monumental a fatuity as you, who can only touch mortality with your elbows, and would abnegate immortality because you cannot clutch it in your fists. Groping for truth at the bottom of a well you would blot out the sun from the heavens, because you can only see the faint glimmer of the stars!

MAN HOLDING HIS OWN.

It is generally admitted that civilization has improved the horse. The ancient world never possessed a horse which could compete with the American trotter or the English racer. But some persons think that the modern man has, through civilization, physically degenerated from the ancient man. The London *Spectator*, however, says that there is not the slightest evidence that man was ever bigger, stronger or more enduring, under the same condition of feed and climate, than he is now."

In proof that man is holding his own in size, there is the positive evidence that modern Egyptians are as big as the mummies who were conquerors in their days. But there has been a growth in size. Modern Englishmen are bigger than their ancestors. "There is not in existence 1,000 coats of armor which an English regiment can put on. Very few moderns can use ancient swords, because the hilts are too small for their hands."

These facts seem reasonable. For physical condition depends upon food, clothing and shelter. The modern man is better fed, better clothed and better housed than was the ancient man. Why should the modern not have been advanced in physical growth by his better physical conditions?

"The most civilized and luxurious that ever existed—the European royal caste, is physically as big, as healthy and as powerful as any people of whom we have any account that science can accept." English acrobats can perform any feat which is recorded of Greek athletes. Cornishmen could strangle with their hands any race of savages, and there is not a barbarous tribe of which 1,000 men similarly armed could defeat an equal number of Englishmen, Americans or Germans.

It is doubtful if any Greek, Roman or German swimmer could have crossed the English channel from Dover to Calais, as did Capt. Webb.

A FIFTH AVENUE PICTURE.

Trained pugs now sit at milady's window with a bow of bright-colored ribbon at their necks, and it is easy to see that they regard themselves as a very superior kind of dog. While you gaze at the petted beast you have also a chance to admire the fine design of milady's lace curtains, which, as a matter of course, originally belonged to the Empress Eugenie, and "were picked up while we were in Europe last summer."—*New York Mail.*

The letters of Benjamin Constant to Madame Recamier, which have just been published in Paris, are full of frantic sentimentality. This man, approaching 50, wrote to the *spiritueile* lady that he had been "crying all night" because she did not care for him; "career, ambition, study, intellect, diversion, all have disappeared. I am no longer anything more than a poor creature who loves you."

He that once did you a kindness will be more ready to do you another than he whom you yourself have obliged.—*Franklin.*

A DEADLY COMET.

The Probability of a Conflagration in the Sun That May Burn All Life Off the Earth.

The idea that the comet of 1880 may be identical, not only with that of 1843, but with that of 1668, the period having been reduced from 175 years to thirty-seven, was suggested at the Astronomical Society in April, 1880, by Mr. Marth, a mathematician of great skill, and well known for the zeal with which he attacks problems relating to the movements of the satellites of Saturn and Mars. He says:

"Supposing the comet of 1843 is the same as that of 1668, it would not be very wonderful that it should reappear after thirty-seven years, instead of 175 years. The velocity of a body moving in the solar system depends simply on its distance from the sun, and on the period of revolution. If the velocity is reduced by a resisting medium, there will be a reduction of the period, and there is nothing whatever unreasonable in the supposition that, however weak the corona may be, its resistance would have a very great effect upon the motion of the comet which rushes through it; so that I should not be at all surprised if it should turn out that the comet of 1880 is the same as the comet of 1843 and that of 1668, and that its revolution has been so much affected that possibly it may return in, say, seventeen years."

Now, if this theory of the comet of 1880 be the true one, we are somewhat more nearly interested in the matter than we are in most theories respecting comets. If already the comet experiences such resistance in passing through the corona when at its nearest to the sun that its period undergoes a marked diminution, the effect must of necessity be increased at each return, and after a few, possibly one or two, circuits the comet will be absorbed by the sun.

It will be remembered that Sir Isaac Newton recognized the possibility that it might happen to a comet, having such an orbit as that of the comet of 1680 (generally known as Newton's comet), and that he had considered the consequences might be full of danger to this earth. Yet he only dwelt on the danger arising, as he judged, from the addition of so much fuel to the solar fires. We now know that the real danger lies, not from the absorption of so much matter as may exist in a comet's head and nucleus, but from the conversion of the momentum of the swiftly-rushing mass of the comet into heat, the thermal equivalent of its mechanical energy.

I have for my own part been long of opinion that the periodical increase of such stars as Mira (the Wonderful star) in the Whale, and Eta, of the Argo, is due to the motion of some large comet, followed by a meteoric rain about these two stars. I have indicated fully in my "Pleasant Ways in Science" the reasons which induce me to believe that the outburst of the so-called "new star" in the Northern Crown in 1866 is to be similarly explained. Without saying that I consider there is absolute danger of a similar outburst in the case of our own sun when the comet of 1843 shall be absorbed by him (a result which will, in my opinion, most certainly take place), I will go so far as to express my belief that if ever the day is to come when "the heavens shall dissolve in fervent heat," the cause of the catastrophe will be the downfall of some great comet on the sun.

I believe the passage even of the head of a comet over the earth would do little harm, for the simple reason that the velocity with which the meteoric masses forming the head would travel at the earth's distance from the sun would be too small to lead to any very mischievous result. If the shower of meteoric masses were very dense, the meteors themselves being of the larger sort, and so able to break their way through the earth's atmosphere, the shower might kill a few of the earth's inhabitants, or even many hundreds. But there would be no widespread destruction of life.

It would be altogether otherwise, believe, if a comet of the larger sort fell into or were absorbed by the sun. The danger would be in the sun's own weight, not in the comet or its attendant train. The bodies forming the head, nucleus and train of the comet would fall in immense numbers, with enormous velocity, and each with mighty momentum on the sun's fiery surface. Possibly (in my opinion probably) their most destructive work would be accomplished below that surface, under the still more stupendous attractive energy of that smaller, because more condensed, orb within which I take to be the true ruling center of the solar system.

It might well be that the effects thus produced would be but transient. In a few weeks, possibly in a few days, or even hours, the sun, excited for a while to intense heat and splendor, would resume his usual temperature, his usual luster.—*Richard A. Proctor's Familiar Science Studies.*

TROUBLES OF A SOCIETY REPORTER.

"I say," said the reporter, "I don't know whether this is right."

"Don't know whether what is right?" demanded the city editor.

"This wedding. I went there tonight and they gave me a heap of rot about their frocks, but I don't know whether it comes out straight or not. Now, here is Mrs. ——. I've got her in a panier silk, trimmed *a la* gross grain, with black point-lace underskirt and box-plaited hair. Does that sound natural?"

"Who sent you to a wedding?" asked the city editor, contemptuously. "Don't you know that gross grain is a color? That was a gross-grain, box-plaited dress, trimmed *a la* black point lace, and her hair was combed *en pannier*. You ought to know better than to get things mixed that way. Who else did you get? How was the bride dressed?"

"I've got her all right," replied the reporter. "She wore a white *bouffant* with a Princess of tulle veil; the underskirt cut *decollete* around the bottom, and trimmed with a basque at the sides."

"That's better," said the city editor, encouragingly. "That sounds something like it. How was her hair?"

"Her hair was shirred," replied the reporter. "Shirred at the sides and corsaged on top."

"I don't believe that's right," observed the city editor. "Read that again."

"It was corsaged at the sides and shirred on top," said the reporter, referring to his notes.

"Of course," smiled the city editor. "It makes all the difference in the world. You never saw a woman with her hair corsaged on top in your life."—*Louisville Courier-Journal.*

VACCINE POINTS.

There are several places in different parts of the United States where there are stables or farms where a business is made of supplying the market, so to speak, with "vaccine points." There is such a place in Chicago, a farm at Fond du Lac, Wis., another place at Cleveland, Ohio, also at Chambersburg, Pa., and Chelsea, Mass. When a person starts to prepare a number of animals, he inoculates the first heifer with cow-pox, and then he transfers it from that heifer to the others he desires to use. The best and healthiest heifers are selected for this operation; these heifers are generally Herefords and Devons. The operation does not injure them at all, and after they recover they are quite as well fitted for the farm or dairy as if they had never been inoculated. The "vaccine points" are taken from the udders of the heifers, and in cities like Chicago these "points" are sold at 10 cents each, wholesale. It may be interesting to add that not many years ago it was feared the genuine cow-pox was lost; but it was discovered by a French scientist in France, and now no apprehension is felt, as there are so many places in the United States alone where its preservation is well guarded

ASTRONOMICAL PROGRESS.

Like the land of the sea, the stars of heaven have ever been used as effective symbols of number, and the improvements in the method of our observation have added fresh force to our original impressions. We now know that our earth is but a fraction of one out of at least 75,000,000 worlds. But this is not all. In addition to the luminous heavenly bodies, we can not doubt that there are countless others, invisible to us from their greater distance, smaller size, or feebler light; indeed, we know that there are many dark bodies which now emit no light, or comparatively little. Thus, in the case of Procyon, the existence of an invisible body is proved by the movement of the visible star. Again, I may refer to the curious phenomena presented by Algol, a bright star in the head of Medusa. This star shines without change for two days and thirteen hours; then, in three hours and a half, dwindles from a star of the second to one of the fourth magnitude; and then, in another three and a half hours, reassumes its original brilliancy. These changes seem certainly to indicate the presence of an opaque body, which intercepts at regular intervals a part of the light emitted by Algol.

Thus the floor of heaven is not only "thick inlaid with patines of bright gold," but studded also with extinct stars; once, probably, as brilliant as our own sun, but now dead and cold, as Helmholtz tells us that our own sun will be, some 17,000,000 years hence.

The connection of astronomy with the history of our planet has been a subject of speculations and research during a great part of the half-century of our existence. Sir Charles Lyell devoted some of the opening chapters of his great work to the subject. Haughton has brought his powers to bear on the subject of secular changes in climate, and Croll's contributions to the same subject are of great interest. Last, but not least, I must not omit to make mention of the series of massive memories (I am happy to say, not yet nearly terminated) by George Darwin on tidal friction, and the influence of tidal action on the evolution of the solar system. I may perhaps, just mention, as regards telescopes, that the largest reflector, in 1830, was Sir W. Herschel's, of four feet; the largest at present being Lord Rosse's, of six feet; as regards refractors the largest then had a diameter of eleven and a quarter inches, while your fellow-townsman, Cooke, carried the size to twenty-five inches, and Mr. Grubb, of Dublin, has just successfully completed one of twenty-seven inches for the observatory of Vienna. It is remarkable that the two largest telescopes in the world should both be Irish.—*Popular Science Monthly.*