

THE ELECTRIC LIGHT IN AN ART GALLERY.

At a reception held at the Union League Club House, in this city, a few evenings ago, the experiment of lighting a portion of the picture gallery with electric lights was tried with satisfactory results.

One part of the gallery was lighted with gas and the other portion with Maxim's incandescent burners, supplied by the United States Electric Lighting Company, who also illuminated the street and avenue fronting the building with one of their powerful arc lights.

It was considered doubtful if the commingling of the two lights—gas and electric—would be sufficiently harmonious to admit their use together without destroying the harmony of color or richness of tint in some of the ninety beautiful paintings—valued in the aggregate at \$265,000—which adorned the walls of the Club House on this occasion. But the result has proved that the electric light is feasible for illuminating galleries of art, and in many respects that it is far better than gas for the purpose.

The quality of the light approaches very closely to that of daylight, hence the artist's conception of color is not distorted as by the yellow tint which gas produces. The picture appears to the observer as it did to the artist when it left his easel.

The electric light takes up none of the oxygen of the room, the exhaustion of which in galleries where gas jets are used renders them uncomfortably warm, vitiating the atmosphere, and thus detracting from the pleasure of visiting such places at night.

The result attending the exhibition the other evening, of using the electric light and gas light together, and then either separately, establishes the feasibility of using the electric light alone for exhibiting pictures to the best advantage or of blending the two and heightening the brilliancy.

The Maxim incandescent burners were placed at intervals between the gas jets on the main pipe which extends around the room, so that the rays of light were projected from the same line, thus avoiding a cross-light, which artists and exhibitors so much abhor.

A Summer School of Natural Science.

The Boston Society of Natural History will open a seaside laboratory at Annisquam, Mass., June 15, the session to end September 15. There will be no stated course of instruction and no lectures, the purpose being to afford opportunities for the study and observation of the development, anatomy, and habits of common types of marine animals under suitable direction and advice.

MISCELLANEOUS INVENTIONS.

Mr. Joseph L. Camp, of Cannonsburg, Pa., has patented a device for facilitating the sealing of cans with wax, whereby the objections to the old method are avoided. It consists of an upright metallic lamp chimney having an inclined open spout or conductor attached at one side, near its base, both chimney and spout being heated by a lamp. There is a slide supported by suitable standards on the lamp holder or case, and inclined toward the chimney, in which slide is placed a stick of wax with its lower end resting against the chimney, above the spout, and as the wax is gradually melted by the heat of the chimney it drops into the spout, and may be poured thence upon a can to seal it.

Mr. Charles G. Trafton, of Slatersville, R. I., has patented an improved thread guide for spooling machines for guiding the thread as it runs from the bobbin to the larger spool. The object of this invention is to relieve the self-adjusting guide of all pressure tending to increase the friction of its movement, so that the action shall be most delicate. It consists in a guide plate pivoted to a supporting rod that is formed with the friction surface over which the yarn runs.

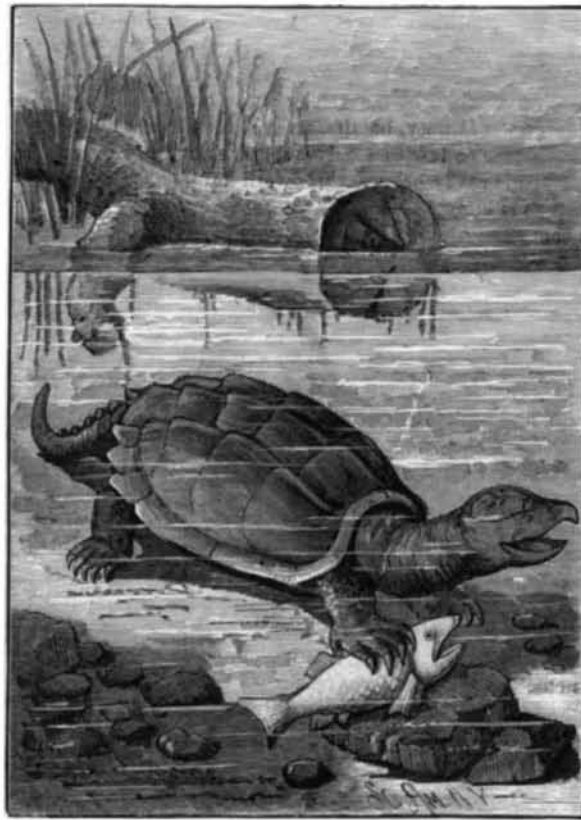
Mr. David Gaussen, of Broughton Hall, Lechlade, County of Gloucester, England, has patented an improvement in the manufacture of vulcanized India-rubber, etc., which consists in corrugating such sheets on both sides, so as to produce a series of hollow arches or hollow semi-cylindrical formations, such as those usually formed by the corrugation of sheets of galvanized iron, the grooves on the one side being alternate with those on the opposite side of the same sheet, that which is a convexity on one side being itself a concavity on the other side, and on one and the same side a convexity or ridge being followed by a concavity, and a concavity by a convexity.

KRUGG JUGS.

The jugs shown in the annexed engraving are made by the celebrated manufacturer whose name they bear. They are fience and gris, and exhibit the odd forms and curious decoration once so popular in Austria. The work is minute and the execution fine, and the quaintness of the designs would recommend them to any collector of objects of vertu.

THE ALLIGATOR SNAPPING TURTLE.

The alligator snapper (*Macrochelys lacertina*), the largest of fresh water turtles, has its headquarters in the shallow, tepid bayous of Louisiana, although it ranges up the Mississippi to the Missouri. It bears a strong resemblance to a common snapping turtle greatly magnified in size and ugliness, and in this latter quality might well contest the palm with the South American matamata, a turtle, by the way, of which no correct cut has fallen under our notice. It is usually represented with a thick head and neck, whereas they really look as if a log had fallen on and flattened them. In our present species the head and neck are out of all proportion to the body, giving it an overbalanced appearance,

**THE ALLIGATOR SNAPPING TURTLE.**

and rendering it impossible for the animal to more than slightly draw the neck beneath its shell. As far as protection is concerned this is of small consequence, for none of the coresidents of its haunts would think of attacking it, their chief concern being to avoid falling into his clutches. Lurking in the shadow of some rock or log, or partly buried in the mud, with neck retracted as far as possible, its rough-brown skin and moss-covered back give it so much the appearance of an old stump that it is unnoticed by the fish sporting in the vicinity, until, perhaps, one ventures too near. Then, with a sidelong spring, at the same time darting out its neck, the turtle seizes his prey, which he devours at leisure, holding the fish down and under him as a dog would a bone. It is so voracious as to cause sad havoc among the fish, while its wariness renders it difficult to capture. A gentleman who had introduced a pair into a small fish pond found them so destructive that he wished to get

**KRUGG JUGS.**

rid of them. They preyed upon the fish, and also came to be fed whenever the fish were. One was speared while feeding; but the larger kept out of the way until he was tempted to seize a hook baited with a large minnow. Finding himself caught he braced against the rock, and, with a sudden jerk, broke the hook. After this escape he was more careful than ever, and succeeded in keeping out of danger. This turtle occasionally attains a length of 6 feet and a weight of 150 pounds, but the most common size is from 10 to 50 pounds. It is brought into the markets to some extent as an article of food. The eggs, like those of all other turtles, are deposited in the sand and hatched by the heat of

the sun. If the eggs are broken the immature young will snap in a feeble way, showing that this part of their disposition is inborn and not the result of education.

FREDERIC A. LUCAS.

New Rust Preventive.

A new method of protecting the surface of iron from rust has been brought forward by Mr. Ward, of London. The new "inoxidizing" process, as it is termed, consists in combining a silicate with the metal by the aid of heat. Cast or wrought iron objects are first coated, by painting or dipping, with a silicate glaze, which quickly dries, and the articles are then passed through a furnace, or rather oven. In this way the silicate composition is said to be fused and absorbed into the metal, which upon cooling is found to have assumed a dull black appearance. The coating is said to be so far homogeneous with the metal as to protect it from any change from long exposure to the atmosphere; and at the same time the silicate is not liable to disintegrate or separate from the iron. The articles treated in this manner may be ornamented by combining the silicate wash with any vitrifiable colors. Thus smooth polished colored surfaces may be produced upon iron, which, while possessing features distinct from ordinary enameling, yet present superior and more durable results than those obtainable by ordinary painting and varnishing.

The Matanzas Exhibition.

Late advices from Havana state that the Matanzas Exhibition is likely to prove a financial failure. The attendance is very small, except on Sundays. In the department of industrial products the Exhibition is pronounced a success, but it fails in its display of machinery and agricultural products. The exhibit of the Havana Arsenal is particularly full and well arranged, so that visitors can readily study the successive stages and processes of manufacture of each object. The models of cannon of all sorts and periods, from the earliest to the most modern, are regarded as particularly creditable; but it is not an encouraging sign to see the post of honor accorded to such things in an industrial exhibition.

The Beef Juice Furor.

In the present furor for fluid beef juice, says Dr. Fothergill, the necessity for starchy matters is being quite overlooked, or, to be very safe, underestimated. These meat products furnish—the best of them—little glycogen or animal starch, and yet that is the fuel food of the body *par excellence*. We must be guided by rational knowledge, by physiology and not by fashion, in our dietetics. When there is very feeble digestion, then the digested milk and milk gruel advocated by Dr. Roberts is to be employed. — *The Practitioner*

Kentucky Horses.

It is claimed that the fastest horses in the world have been bred in the neighborhood of Lexington, Ky. Among the more notable are Maud Stone, better known as Maud S., record, 2:10¾; Wedgwood, 2:19; Woodford Mambrino, 2:24; Trinket, 2:19¼; Dick Moore, 2:22; John Morgan, 2:24; Indianapolis, 2:21; and Voltaire, 2:21.

The number of superior carriage, saddle, and trotting horses sent out from this part of Kentucky is very great. A prominent breeder was lately asked the secret of their superiority. He replied: "There is a combination of causes.

The great majority of the horses here have some good blood in them, and you will find it crossed somewhere back in their pedigrees. The best strains of running and trotting blood have been taken from here to other States, and they there fail to produce the desired results. There is something in the blue grass, the water, the atmosphere, and the general climatic influence, and much in judicious breeding and training. We force our horses to a gait when they are one year old, and at three years old they are pretty well developed. The Northern men, however, always improve them." "How long have Kentucky horses held their high place?" was asked. The breeder replied: "No one hereabout can tell. I know men who have lived here eighty-five years, and they state that from their earliest childhood they have heard of the superiority of our horses. Their fathers before them had the same story to tell. The fact is

that somewhere in the past there was brought into this State a pure strain of thorough blood, derived from the best stock of the mother world, and it has transmitted its qualities from sire to son to the present time. It is a lamentable fact that we have not the exact data upon which to base a history of the Kentucky horse."

The Manufacture of Bromide.

Fifteen years ago a few hundred pounds of bromide per year, imported from Europe, sufficed for the wants of the trade, and the price of the article was about \$5 per pound. Since that time the value of bromide of potassium as a

nervous sedative has caused such a demand that a supply of nearly 50,000 pounds per month is absorbed. Bromine, from which bromide and hydrobromic acid is made, is found in the "mother" or "bitter" water yielded by the salt wells of the Ohio valley at Pomeroy, O.; also the Kanawha and Monongahela valleys, tributary to the Ohio from West Virginia and Southwestern Pennsylvania. The two first named regions furnish the wells whose water is richest in bromine, and this element is almost entirely wanting in the salt waters of the Saginaw and Syracuse salt regions. The price of the article has, in the time stated, fallen to less than one-tenth that given above, and the demand for bromide shows a steady increase.

BOTANICAL NOTES.

Insectivorous Plants.—Last year attention was called in the *Cronica Cientifica* to the fact that Vayreda, in his work on the "Noteworthy Plants of Catalonia," had asserted that certain Spanish species of catch-fly (*Silene crassicaulis*, *S. aperta*, and *S. nutans*) possess the property of digesting the soft portions of the bodies of the insects that they capture by means of the viscid secretion which invests their stems. In a recent number of the *Cronica* Sig. Vayreda gives the results of certain experiments made by him on one of the above-named species last summer, for the purpose of verifying his original statement. He found that the viscid secretion on the internodes of the stem began to make its appearance about twelve or fifteen days before the flower buds opened. This secretion is transparent, colorless, and has a faint characteristic odor. Its viscosity is about the same as that of bird-lime. It is partially soluble in water and almost entirely so in alcohol, and appears to be an oleo-resin mixed with a volatile oil. It produces a marked narcotic action on insects that come in contact with it. Sig. Vayreda having selected a number of plants of *Silene crassicaulis* of the same age, size, and vigor, dusted the viscid substance of some of them with plaster of Paris and covered that of others with cotton fibers so as to entirely prevent the access of insects to it; other plants he left in their natural state, and carefully watched the results in both cases. After numerous and attentive observations on the plants fed with insects and on those deprived of them, the author was obliged to confess that he could perceive no appreciable difference between them in development, dimensions, color, or physiological evolution, all having thriven equally well. When the seeds were mature, these were likewise compared microscopically and also weighed, but no difference could be distinguished between them. Sig. Vayreda hence draws the conclusion that while there is no doubt at all that the viscid secretion of *Silene* possesses the power of capturing and killing insects and of discoloring their bodies, its purpose is not to prepare nourishment for the plant, but rather to serve as a protection to the floral organs against unwelcome visitors; and, further, he believes that the secretions of other alleged insectivorous plants, such as *Drosera*, are provided for a like purpose. It would prove an interesting matter if some one, following Sig. Vayreda's example, should pursue a series of investigations on some of our American viscid species of *Silene*, the wild pink (*S. pennsylvanica*), for example, with a view of ascertaining whether the viscid secretion possesses the property of dissolving the soft portions of insects' bodies, and, if so, whether this proves of any special benefit to the plant.

Absorption and Diffusion of Heat by Leaves.—In a recent number of the *Annales Agronomiques*, M. Maguennegives an account of an elaborate series of experiments undertaken by him with a view to ascertain the amount of heat absorbed by and radiated from leaves under given conditions. The author's paper is so long that we can merely give an abstract of his conclusions, which are as follows: "All leaves, it appears, diffuse a portion of the heat which they receive, more or less, according to the source of heat. Generally, but not universally, the lower surface gives off more heat than the upper. The absorption of the heat is due to the presence in the leaf of absorbent substances, such as water and chlorophyll. Thick leaves absorb more than thin ones; but the latter, however, transmit heat better than thick ones."

Changes in the Diameter of Trunks of Trees.—According to the *Gardener's Chronicle*, MM. Kraus and Kaiser have been making some researches, from which it appears that the trunks of trees undergo daily changes in diameter. From early morning to early afternoon there is a regular diminution till the minimum is reached, when the process is reversed and the maximum diameter attained at the time of twilight; then again comes a diminution, to be succeeded by an increase about dawn—an increase more marked than that in the evening. The variations in diameter coincide, therefore, with those of the tension, but they are shown to be inverse to the temperature, the maximum of the one corresponding roughly to the minimum of the other, and so on.

Action of Anæsthetics on Plants.—Claude Bernard has shown, says the *Lancet*, that the vapor of chloroform and of ordinary ether hinder the germination of seeds, and M. Rabuteau has found that this is equally true of bromide of ethyl and bromide of amyl. He finds, also, that all the ethers have the same effect. The experiments were made with grass seeds; but the property of germination is merely restrained. Seeds kept thirty-seven days exposed to the vapor of bromide of ethyl or bromide of amyl germinated, when placed under proper conditions, in two days. The question then presents itself: Have these substances a similar action upon plants which are in full progress of growth? Growing cress was exposed for two hours to an atmosphere saturated with vapor of bromide of ethyl. It then appeared feeble,

the leaves hanging down, and it continued in this condition for a day or two, and then revived, but exhibited considerable retardation in its growth compared with other plants of the same age. The leaves of heliotrope become brown, and die in the course of two hours. Acetate of ethyl is somewhat less powerful. Cress lives after it has been exposed to the vapor for three hours, but does not survive an exposure of six hours. Heliotropes are only killed by an exposure of three or four hours. The action of acetate of ethyl is also correspondingly less active on animals.

A Western Oil Flood.

O. P. Yelton, now in Laramie City, Wyoming Territory, has kindly sent the *Era* a copy of the last issue of the weekly *Boomerang*, published in that city, from which the following article is taken:

"We have frequently spoken of the extensive oil wells now being worked by the Rocky Mountain Oil Company, in Sweetwater County, but the facilities for obtaining particulars have been so few that our people are not fully aware of how much is really being done toward developing so rich a deposit as is known to exist there. The company referred to is composed of Omaha capitalists, with Dr. Graff at its head. For the past month he has been superintending the work at the wells in person, and a report of a lengthy interview, on his return to Omaha the other day, appears in the *Herald*.

"Last season the company bored in several places, and collected the oil at other spots where it exuded from the ground, and built six or seven reservoirs to contain it. They stored two or three thousand barrels, but were fated to lose a part of it through an unforeseen casualty. About two weeks ago an ice gorge formed in Popajie Creek, above two reservoirs which held an aggregate of 1,200 barrels. The water poured over and into the reservoirs, and being heavier than the oil displaced it wholly.

"The sea of oil ran over the meadows for several miles about, blackening them as if a prairie fire had swept across. The farmers were incensed, but it was such a loss as the insurance companies would have classed under the heading of 'Acts of God,' and no one charged with fault. Since the gorge passed out the water is being pumped from the wells, which will soon fill to the brim again.

"The company can store from 1,000 to 1,500 barrels of oil a day, when they desire, and can dispose of it, and have reason to believe that theirs is an oil interest larger than that of the whole of Pennsylvania and far easier developed. The president of the company guarantees that they can produce 50,000 barrels per day when they require it.

"The value of Wyoming oil has already been tested. In its crude state, without the least refining or treatment, it serves as an excellent lubricating oil, and the Union Pacific engines are using it. This summer the oil company propose to erect a refinery alongside the Union Pacific railway track, where they will refine it for illuminating purposes, making an excellent head-light oil. Dr. Graff has been out to see about building a direct wagon road from the wells to the railroad, instead of following the present roundabout way, the length of the former being seventy-six miles. He was driven back by the winter, the season being too little advanced. Dr. Graff is looking forward to the time when these wells shall supply all the country west of the Missouri."—*Bradford Era*.

Venus and Mercury at Noon-Day.

We had a superb telescopic view of these two planets a few days since nearly at the time when the sun passed the meridian. We first took a peep at our brilliant neighbor Venus with the naked eye, for she may be seen any clear day in the bright sunshine, if one knows where to look. A pin-head of filmy cloud or a dot of molten silver was the modest form assumed by our sister planet in the sun's majestic presence, as after looking intently, she suddenly came into view from the depths of the blue sky. The telescope was then turned toward her, and the cloudy speck was transformed into a charming crescent as large as the moon. The color was pale gold, and the crescent as slender as the waning moon two or three days before her change. The terminator or line between the light and dark portions of the disk was slightly irregular, so that, though twenty-three million miles distant, we were actually seeing the summits of the mountains on Venus illumined by the sun. The crescent Venus comes next to Saturn and Jupiter as an object of telescopic interest.

Mercury was the next subject for observation, and the shy planet, difficult to find even when the sun is below the horizon, quickly made his appearance under the magic spell of the glass. He did not take on a grand aspect, for he is far away and comparatively small in size, but he looked much as Venus now looks to the naked eye, perhaps not quite as large and far less brilliant. He had, however, a distinctly gibbous phase, like the moon after she has passed her first quarter, for both Mercury and Venus, revolving within the orbit of the earth and being nearer the sun, pass through all the phases of the moon during their course, as seen by terrestrial observers.

Only a short time remains in which Venus may be studied in her present phase, for she is rapidly approaching the sun, and will soon be hidden in his light. A good spy-glass will show the crescent form of this bewitching planet. This was all the help that Galileo had, and with its aid he was the first observer who beheld the crescent phase. A good opera glass will accomplish the feat with sharp-sighted observers.

A few instances are on record where the crescent has been seen with the naked eye, but this, like detecting the moons of Jupiter, is an exceptional visual gift, which ordinary stargazers may not hope to enjoy.—*Providence (R. I.) Journal*.

Product of an Iowa Creamery.

The *Farmer's Review* prints the following table showing the amounts of milk received each month last year by an Iowa creamery, with the amount of butter made therefrom, and the percentage of the yield. The average for the twelve months was $4\frac{1}{4}$ pounds of butter for each 100 pounds of milk. During six months the milk was received twice a day, the rest of the year but once a day. It was set in cooling cans, in water at a temperature of from 50° to 55° Fah.

	No. of lb. milk.	Lb. of butter.	Yield per 100 lb.
January.....	50,193	2,225	4.23
February.....	47,643	2,003	4.20
March.....	66,986	2,779	4.00
April.....	98,691	3,795	3.74
May.....	194,166	8,069	4.15
June.....	245,047	9,695	4.07
July.....	244,973	9,977	4.07
August.....	215,177	8,371	3.90
September.....	200,437	8,923	4.44
October.....	169,195	6,793	4.01
November.....	110,383	4,737	4.29
December.....	77,597	3,434	4.42

The Second Bridge Between New York and Brooklyn.

The bridge from New York to Brooklyn, crossing Blackwell's Island, is under contract, and the contractors are now busy on the iron work of the pier foundations. The estimated cost of the bridge is \$5,000,000; the time fixed for its completion is three years. There will be four piers, one at Ravenswood, another at the coal dock on Blackwell's Island, a third on the west side of the island, and the fourth on the New York side, between Seventy-sixth and Seventy-seventh streets. It is intended that the New York approach shall form a junction with the railroads in the Fourth Avenue tunnel, a mile and a quarter above the Grand Central Depot, and that the Long Island approach shall connect with a spur of the Long Island Railroad. The bridge will be 74 feet wide, and will be arranged for two sidewalks, two carriage-ways, and two steam railroad tracks. The span over the water from Ravenswood to Blackwell's Island will be 618 feet, that across the island 700 feet, and that over the river to New York 734 feet. Each pier will rest on bed rock, the dip of whose strata at all points is nearly vertical. The Ravenswood pier only will stand in the water, and a coffer dam will be placed in position next week to prepare the rock for its reception. One corner only of the New York pier will touch the water. The roadway will be 154 feet above the river at high tide, and 160 feet at low tide. A commission to appraise the land needed on Blackwell's Island has been appointed by the Supreme Court.

Cutting Holes in Glass.

The operation of making holes and sections in glass and porcelain is often a troublesome and unsatisfactory one. The firm of Richter & Co., in Chemnitz, have found a way of so impregnating thin German silver disks (15 to 25 mm. diameter) with diamond, that when fitted to a quickly rotating tool, these cut through glass or porcelain in a few seconds, or effect any desired carving with great accuracy. With cylinders made on the same principle, round holes can be quickly and exactly made. The wear of the implement, even after much use, is hardly perceptible.

Lack of Air.

Some workmen think themselves "tired" when they are only poisoned. They labor in factories, breathe air without oxygen, and live in an atmosphere of death. They are, too often, allowed to smoke, and thus add fuel to the flame which is consuming them. They knock off work "tired" and listless, when they are merely weakened by foul air and made dull and heavy by an atmosphere charged with disease. They keep the windows shut and close the door on health, while they lift the gratings of the tomb by breathing and re-breathing the poison from their own lungs, and the floating particles of matter about them. Open the windows—let in the sunshine and the breeze, stop smoking, and you will soon find that it is the poison of confinement, and not labor, that wearies and tires.—*Montreal Herald and Star*.

Magic Mirrors.

The magic mirrors, which have been a good deal discussed of late, are all of metal. M. Laurent has succeeded in making them of glass, which is sufficiently elastic for the purpose. At first he used pressed glass, polishing the surface opposite to the projections; then he tried the thin glass of commerce, engraving a hollow design. The two methods may be combined. When at rest the mirror is plane, and gives good images. By a blowing or sucking action the characteristic features are brought out. Both sides of the mirror are silvered.

Maple Sugar.

From two groves of maples in North Harpersfield, Delaware County, New York, the yield this year has been seven tons of maple sugar. The groves contain 4,200 trees. In 1875 the town of Harpersfield produced 200,000 pounds of sugar, an amount which this year's crop is thought to exceed.