

FORMS MADE BY THE VOICE.

Curious Figures Produced by the Eidophone.

TREES AND VARIOUS KINDS OF FLOWERS.

A Semi-Liquid Substance Shaped by Vibrations of a Note According to a Natural Law.

There is a very wonderful instrument called the eidophone which enables the human voice to produce figures in sand and other substances.

The eidophone includes a membrane, over which is sprinkled a little sand, by a podium or some semi-liquid substance.

When the surface of the disk is flooded with water and a suitable note is sustained through the tube the whole of the surface is covered with beautiful crepitations, or tiny wavelets, forming beautiful and complex patterns.

When a larger quantity of powdered water color is added to the water and a small quantity of the thickened liquid is placed on the centre of the disk a variety of tiny figures can be produced, some star-like in appearance, varying in numbers of their rays from six upward.

By altering the quantity of color in proportion to the water we have further results. Finding a still larger quantity of color paste on the centre of the disk, when a suitable note is sung we first see the heap gather together, but after a short time it will be seen slightly agitated around its edge, and ere long, in obedience to a gradual crescendo, beautifully shaped petals start out and the whole heap assumes a floral form which, when fully developed, resembles a daisy.

In all the variety of figures which the eidophone disk is capable of yielding in obedience to sustained vocal notes it will be found that fortality plays most important part. Sound cannot exist without pitch, but it must not be forgotten that pitch cannot exist without intensity, and it will be well for the eidophone singer to further remember that, although pitch, of the sustentation of a note, intensity, quality, form and vowel can vary to any extent.

In the production of all the figures mentioned, excepting the daisy, intensity is equal, but in order to form the daisy floral form some very gradual crescendos and diminuendos are required. The sudden appearance of the daisy, as it springs into full development in obedience to the crescendos and diminuendos of intensity, seems like a revelation to the singer who sings these floral forms for the first time. Some daisies exhibit two, three and even more rows of petals overlapping each other.

By placing a layer of water color between the disk and a piece of plate glass a permanent impression of sound form may be obtained.

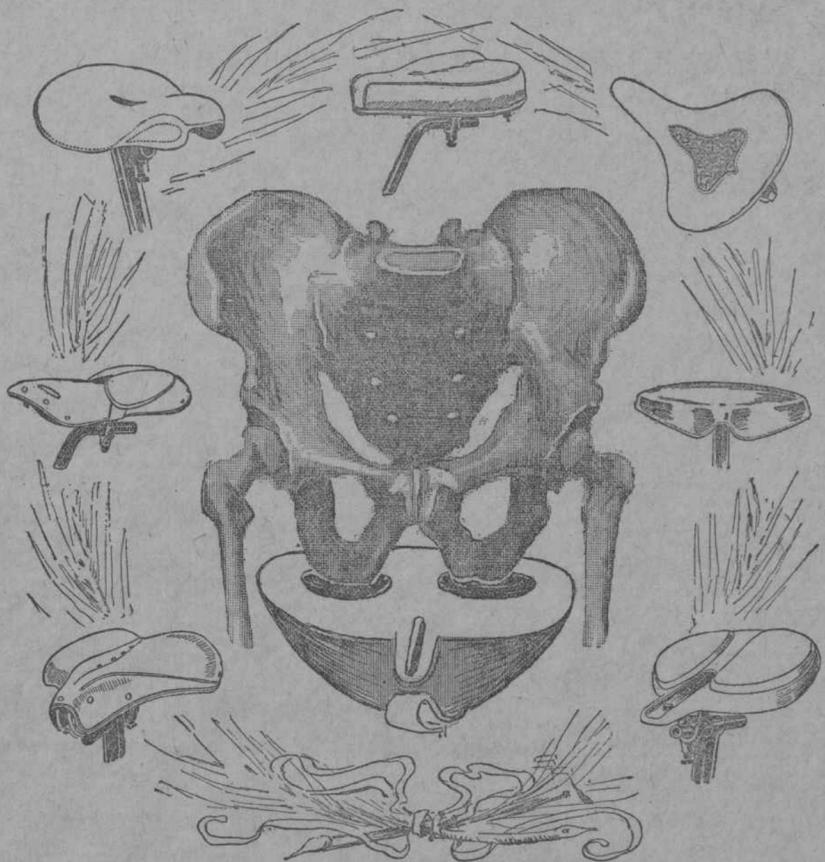
MUST PICK BY HAND.

New Jersey Has Passed a Law That Huckleberries Must Not Be Picked Mechanically.

The House of Assembly of the New Jersey Legislature, now in session at Trenton, has just passed a bill which prohibits the use of machinery in the harvesting of the luscious whortleberry, known more popularly as the huckleberry.

The same apparatus is also used in the gathering of cranberries, a considerable industry in the State. The berries suffer greatly by this process, and the bogmen are all anxious to return to the old system of hand picking, but each fears the violation by another of any hand-picking agreement that may be entered into; hence the appeal to the Legislature by the associated bogmen. The law declares it a misdemeanor, punishable by fine and imprisonment, to pursue the huckleberry or the cranberry in its native bog by the aid of any mechanical device whatsoever.

The Bicycle Seat Problem.



NEW SEATS FOR WHEELS.

Bicycle Saddles for This Season Much Improved.

SOME DANGERS THAT ARE AVOIDED.

It is being more and more recognized that the saddle is one of the most important parts of the bicycle. The bicycle saddle differs from other saddles in the respect that it is the very smallest of all.

Almost the entire weight of the rider rests upon this small saddle. In riding a horse a good deal of the weight is taken up by the stirrups and by pressure upon the horse's sides, while the horse saddle itself is large.

The superficial area upon which the weight is distributed is many times greater in the case of a horse saddle than in that of a bicycle saddle. Even when you sit down in a chair the weight of the body is largely supported through your feet on the floor.

In the case of a bicycle, however, almost the entire weight is supported upon the small saddle, which is not much larger than a man's hand. The only exception to this is that a part of the weight is taken up by one of the pedals, never by both together, as is the case with the stirrups in riding.

The pedal that you are pressing down receives this part of the weight. The weight of the leg is lifted from the pedal that is coming up, and this must be supported by the saddle in addition to the weight of the body.

Physicians have been looking into the question of the bicycle saddle. Many complaints have been traced by them to saddles that were too small and improperly constructed. This has been the case especially with women.

Upon a narrow support that resembled a ridge and was too long and too hard, it has been found that the iliac bones were improperly placed and were strained and stretched apart. In addition to this the long tongue of the saddle caused many injuries.

The bicycle manufacturers have been quick to recognize these defects, and, during the present season especially, the market is supplied with saddles that avoid most of the dangers that the old saddles gave rise to. It has been recognized that a broad saddle is a good thing.

The reformed bicycle saddle of the present day has recognized the fact that it is best to throw all weight on the springs, vented and well-padded cushions of the seat and as little as possible on the tongue or peak. Saddles built upon the proper

principles, it has been found, retain their shape after long use, while those that are bad in the first instance soon get out of shape.

One new saddle is made of felt, leather and cane so shaped as to give the hip bones adequate support, and with a foundation of rattan that allows ventilation.

A new saddle has been made for stout women. It has a short peak and is light, but hard. Two holes down the centre affords ventilation.

What looks like an entirely new bicycle saddle is being evolved for women. This differs from the old saddle in that the riding astride has been almost altogether obliterated. It is more in the nature of a seat facing forward than a saddle.

Another new saddle is made altogether of metal and weighs but sixteen ounces. The cushions rest upon a perforated base, and this insures a light, cool seat. The cushion pads are removable at pleasure, and on them rest those bony prominences of the pelvis that support the body when in a sitting position.

One of the most interesting saddles is that which yields voluntarily to every rise and fall of the knee when pedalling. The two sections of the seat are separate and are covered with leather affixed to coiled springs.

A pneumatic seat for women has also been designed. This is constructed with separate chambers so that the air cannot roll about beneath the rider. Two circular holes in the rear serve to keep the seat cool, and are so placed as to receive and ease the pressure of the hip bones.

Women are especially warned against the hard and long saddle. To obviate this special pads are on the market which can be affixed by a strap to any saddle.

One new saddle for women is poised on a spiral spring and has perforated holes for ventilation down the centre. Another new saddle this year is hung on a hammock spring.

SALVATION ARMY LOVE.

Some of the Autocratic Regulations Prescribed by General Booth for His Followers.

The regulations of the Salvation Army relating to courtship and marriage are calculated to discourage hasty unions and the proverbial leisurely repentance. Officers in the Army are not allowed to marry privates in the ranks. The latter must first be elevated to an equal rank before the union is sanctioned.

This is deemed necessary in the interest of discipline. When Cupid with his dart transfixes two loving hearts, and an engagement is agreed upon, the matter must be at once reported to the superior officer in command in order to receive official endorsement. This sanction is only given after an official investigation.

The couple are then separated for a year, one of them being sent to a distant post. At the end of the twelfth month, if their mutual love has survived the ordeal of separation, the aidge, "out of sight out of mind," disproved, and the truth of "absence makes the heart grow fonder" proved, the expression of love made again publicly, there is no further objection to the union, the only stipulation being that it shall take place in the barracks and in the presence of the Army.

NEW KIND OF PHOTOGRAPHY.

Many Pictures of a Moving Figure on One Plate.

NOW THE PICTURES ARE MADE.

Chromophotography is a new development of the camera which has been brought to a degree of perfection by Mr. E. J. Marey of Paris. He has secured some pictures by this means that are very interesting and novel.

One of these gives the positions of an athlete in jumping, in which three of the figures are in the air and every one of the muscles is shown. The peculiarity of this picture is that it was taken on a single plate by this new process.

According to the method followed by Mr. Marey in taking these pictures, the object to be chromophotographed performs its movements in full sunlight before a black background of unilluminated velvet. The camera which he used is furnished with a slotted disc which can be uniformly rotated.

As each slot cuts the beam of light reflected from the moving object the sensitive plate receives an impression. This indicates the exact form and position of the moving object at the instant.

The duration of the exposure in the pictures of the athlete was 1/300th part of a second. The interval between the formation of each image was one-tenth of a second.

A chronometric dial is so placed that the position of its revolving pointer is recorded on the same sensitive plate. This instrument serves to indicate both the time of the exposure and the time between successive exposures, the pointer on the chronometric dial being driven at a known uniform velocity.

It has been found by scientists that this instrument is useful in recording the movements of all forms of animal life, from elephants to insects. An arrangement has also been perfected by Mr. Marey for taking three simultaneous chromophotographs of a flying bird from the front, the side and from above.

By means of these chromophotographs bas-reliefs have been constructed which show the successive attitudes of the bird during its flight. Fishes in motion have also been photographed according to this new method.

Mr. Marey, the inventor of this new system of taking photographs, is the author of a work handsomely illustrated with reproductions of his photographs and fully describing the process. This book has been translated into English by Mr. Eric Pritchard.

THE POSTER IN POLITICS.

Campaign Clubs Will Have These Novel Emblems.

TOM REED ON A SILK BACKGROUND

McKinley Pictured Carrying a Tin Pail and Hill in Characteristic Pose.

The poster has got into politics. Jules Cheret and the other great French artists who originated the modern school of art in posters will be responsible for the poster in the 1896 campaign for President.

A firm that does a large business in campaign posters announces that the political clubs have fallen victim to the poster craze, and have ordered banners of campaign leaders made after the poster order.

"You see," said the manager of the firm, which has been in the business of making campaign banners for many years, "we are put to our wits' end every four years for the new banners for the political clubs. Political clubs of to-day are not contented with the Stars and Stripes, and the old battle flags that are used to copy them, with their stained spots and their tatters are not known to the present generation. Each club wants its own thing new, with the name of its candidate upon it and the indication of party sentiment, as well as a certain beauty of conception besides. They give us carte blanche in price and design and we must do the best we can for them."

"When the poster craze broke out we looked it over carefully to see if it could be adapted to our business of supplying political banners. But we decided that it could not.

"It was such a striking idea and capable of so many workings that we were more than anxious to carry it out and issue political posters. I had an artist sketched in honor 'You handle campaign banners?' he asked. 'We do,' I replied. 'Then you'll like this one I've made of McKinley. It is done after the new poster fad.'

"Quickly, before I could say no, he unfurled a long piece of paper the size of a door, and showed me the most protectionist behind the shield of his country. 'That is in red, white and blue, for true patriotism,' he said. 'But I can get it up in yellows and blacks, like the Bettrys, if you want it so. You see I have brought in the McKinley tin, and worked up the idea of the workman.'

"The picture caught my eye. 'Leave it,' I said. 'There's to be a meeting of the McKinley Club to-night. Leave it and I will show it to them.' He left the big paper banner, with me and I took it to the club. When the workmen saw it they went wild. 'Get us a big one in bunting,' they said; and for the next month I was busy putting together the hardest banner I ever had on my hands.

"The ordinary campaign banner, if it be of Stars and Stripes, is made like the American flag. If letters are wanted these are sewed on by hand, or are done in gold leaf, or, best of all, in stitching with gold thread through and through the banner, both sides being stitched alike.

"In Hill's poster we begin with the Stars and Stripes. They are put by hand upon a white background. The stars must be placed carefully with their points spread, and the stripes cut away to make room for the figure ornaments.

"The flag with 'I am a Democrat' comes next. It is a piece of silk cut in the right shape and sewed upon the banner. The folds in it are done by a girl who is a clever artist with the needle. With dark silk she goes over that white banner tracing the figure ornaments.

"The figure of the statesman is hand-drawn. The black coat is a piece of broadcloth cut out like a man-doll's coat. It is first glued in place, and finally stitched there; by artistic hands, and as the last touch of art resolves its white lines with white silk to mark the creases in the coat.

"The features, hands, hair and feet are put in with fine silk thread, stitch after stitch, until as perfect as wrought tapestries.

"The Reed poster, which you see upon the wall, was the simplest to do. It has not been sent out yet. Neither has any of the others. But you are positively the first one to see the Speaker in his characteristic attitude, the one always pictured for him by his admirers throughout the country.

"For the Reed poster we took pale yellow silk, and placed the figure of Reed upon it in dull silk, with the usual white lines for lapel and tie. His head was easy for us, just a bit of outline work, and the gavel in brown was the only relief from the yellow and black—a striking combination. The lettering is in all colors, with a preference for red, white and blue.

"The cost of a poster is reckoned by the work we put upon it. This poster of Reed cost us only \$100, while others come as high as \$500.

"The craze for posters is developing strange things. I saw a woman gloating over a water color poster of her baby, a light blue cherub upon a green throne. But when it comes to sensible and interesting things I do not think there is anything much more attractive than a political campaign banner gotten up like a vivid poster."



First Poster of McKinley.



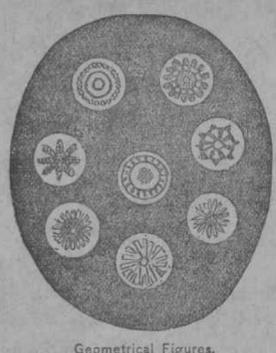
Reed in Character.



Poster of Hill.



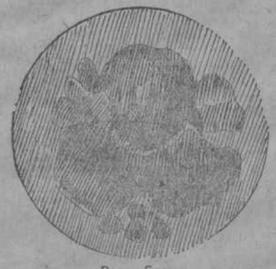
For a Brice Club.



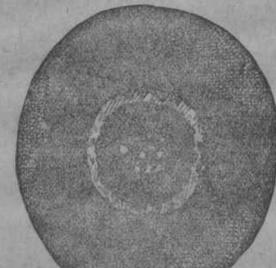
Geometrical Figures.



Daisy Form.



Pansy Form.



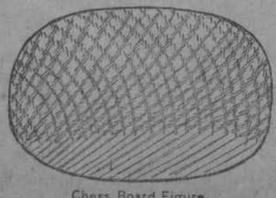
Centres of Motion.



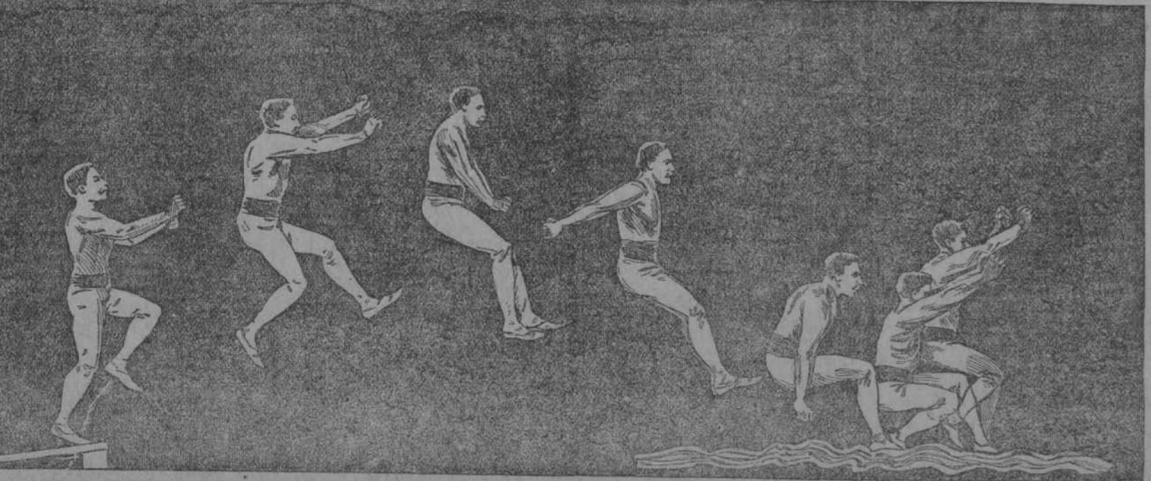
Tree Form.



Fern Form.



Chess Board Figure.



INSTANTANEOUS PHOTOGRAPHS OF A RUNNING HIGH JUMP.