FOR YOUNG PEOPLE.

A BIRD OF LETTERS.

"ABC, ABC, ABC!"
The parrot cried, proud as could be.
"We birds who know letters
Are surely your betters,"
He called to the birds in the tree.

But the birds in the tree-top at play
All chirped in the jolliest way:
"We don't know ABC's,
But we're quite at our ease
In these higher branches," said they.
—H. L. Bridgman, in St. Nicholas.

BEAR THIS IN MIND.

Some Day the Advice Here Given May Keep You from Drowning.

The human body weighs a pound in the water, and a single chair will carry two grown persons—that is, it will keep the head above water, which is all that is necessary when it is a question of life or death.

One finger placed upon a stool or chair, or a small box or piece of board, will keep the head above water, while the two feet and the other hand may be used as paddles to propel the body toward the shore. It is not at all necessary to know how to swim to keep from drowning. A little experience of the buoyant power of the water, and faith in it, is all that is required.

We have seen a small boy, who could not swim a stroke, propel himself back and forth across a wide, deep pond by means of a board that would not sustain five pounds weight.

Children and all others should have practice in the sustaining power of water. In nine cases out of ten the knowledge that what will support a pound weight is all that is necessary to keep one's head above water will serve better emergencies than the greatest expertness as a swimmer.

A person unfamiliar with the buoyant power of water will naturally try to climb to the top of the floating object on which he tries to save himself. If it is large enough, that is all right. But generally it is not large enough, and half a struggling group is often drowned in the desperate scrmmble of a life and death struggle to climb on top of a piece of wreck or other floating object, not half large enough to keep them all entirely above water.

This often happens when pleasure boats capsize. All immediately want to get out of the water on top of the overturned or half-filled boat, and all are drowned except those whom the wrecked craft will wholly bear up. If they would simply trust the water to sustain ninety-nine hundredths of the weight of their bodies and the disabled boat the other hundredth, they might be saved under most circumstances.

An overturned or half-filled boat will sustain more people in this way than it will carry. It would keep the heads of as many people above water as could get their hands on the gunwale.

These are simple facts, easily learned, and may some day save your life.—Golden Days.

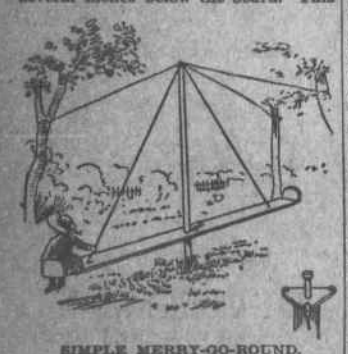
THE MERRY-GO-ROUND.

How the Boys and Girls Can Make

Sometimes we see a merry-go-round, or revolving swing for children, made by simply pivoting a strong board on a post. A better arrangement is that shown in our illustration. It revolves with greater ease and does not necessitate the children sitting on opposite ends to balance each other.

Let the board be at least 16 feet long, and at the center attach, by mortising, a four-inch post eight feet long, which is braced in an upright position by means of wire or small iron chains passing from near its top to a point well out toward either end of the board.

In the base of this post a one-inch rod should be firmly set, and project several inches below the board. This



SIMPLE MERRY-GO-ROUND.

forms the pin on which the swing revolves, and should fit loosely in the socket, a hole in the top of the post which has been set in the ground so as to project about 12 inches.

At the top of the post a similar pin is inserted and passed through a triangular piece of iron, which any blacksmith can make for you. At each corner of the triangle the metal is drawn out and curved upward into a loop, from which chains or wires pass to the trees at a little distance.—American Agriculturist.

Enlarging a Girl's Skull.

In a Georgia town lives a girl of 11, with the intellect of an infant. She was bright enough until she reached the age of seven, and then she began to lose memory and speech. The case was a puzzle to physicians, until a young member of the profession announced that her skull was too small to permit the brain to grow. This suggested the idea of enlarging the skull, and, such are the triumphs of modern surgery, the operation was performed, the girl survived it, and now, after the lapse of a month, she is physically as well as ever and the mental improvement is most marked. Perhaps, some day, we can have our heart and lungs made new again as surgeons grow still more clever.

"See That Hump!"

"Bicycle-riding contracts the chest."
"Yes, but look what fine, round shoulders you get."—Up-to-Date.

PORPOISE HUNTING.

Dangerous Sport Followed by the Passamaquoddy Indians.

In the northern part of Maine and in Nova Scotia there are still many Indians of the Passamaquoddy tribe, and these Indians follow a pursuit that is almost unknown to the outside world. They shoot porpoises. Everybody familiar with the sea has watched these queer creatures. They are less shy about showing themselves than any other inhabitant of the ocean; but to see them tumbling over themselves in their odd regular way is all the world in general ever has to do with them; the Passamaquoddy Indians, however, not only shoot them, but make their living mainly out of porpoise, and a living well earned it is, too, for there is no occupation in the world that calls for more bravery, skill and endurance. The money is obtained by selling the oil, and pure porpoise oil brings the Indians about 90 cents a gallon; the oil obtained from the paws sells higher; it is tried out by itself because of its superiority, and is valued by watchmakers and others, who want an oil of very fine lubricating quality. The Indians eat the porpoise flesh—it is very much like fresh pork and many white fishermen around the coast like it well enough to give the Indians fresh fish in exchange for it.

There are no game laws to protect porpoise, and the hunting goes on the year around, though the blubber is something like two inches thick in winter, against one and a half in summer; but then the danger and suffering to the Indian, not the fish, are far greater in cold weather.

Make a guess as to how long a big porpoise is. He does not look, when seen from shore or from a steamer's

SHOOTING PORPOISES.

deck, as if he were seven feet long, but about that he frequently is, and five feet about the girth, and with six or seven gallons of oil in his queer body.

Birch bark canoes are still used by the Indians for this sport, and the way they handle them in the wide, stormy waters of the Bay of Fundy is a revelation as to the seaworthiness of those wonderful little craft. Boys must begin their training as porpoise hunters [illegible] out with an older man in good weather first. The Indians generally go two together, for, while shooting the porpoise can be done easily by one in smooth water, it is not the shooting, but the landing of him that is the ticklish business. After he is shot he is speared to finish him, and then the Indian runs two fingers in the blow-hole, takes hold of his fin with the other hand, lifts the great fellow until at least half his length is above the canoe's gunwale, and then drags him aboard. Imagine doing that in a birch bark canoe on a rough winter sea. Yet a man alone in his canoe under such conditions will often accomplish the feat, and not so rarely he will fail, and lose his life to boot. The usual thing is for two to work together, and then accidents are comparatively rare. A man has to stand up to shoot, if the water is rough. Of course he could not see his game if he didn't. One of those Indians can stand and shoot, and at the same time adapt every movement to the swaying of his boat, keeping her on an even keel with a success that is simply miraculous.

There are many sharks in these waters, and there are perfectly authenticated stories of sharks cutting porpoises in two just as the Indians were hauling them aboard, but they don't seem to mind the sharks at all, driving them off with their long spears when they are too encroaching, with perfect coolness.

Eastport, Me., is the market where the Indians sell most of their oil.—Chicago Inter Ocean.

How Sugar Is Made White.

The way in which sugar is made perfectly white, it is said, was found out in a curious way. A hen that had gone through a clay mud puddle went with her muddy feet into a sugar house. It was observed by some one that wherever the tracks were the sugar was whitened. This led to some experiments. The result was that wet clay came to be used in refining sugar. It is used in this way: The sugar is put into wooden jars shaped as you see the sugar loaves are. The larger ends are upward. The smaller ends have a hole in them. The jar is filled with sugar, the clay put over the top and kept wet. The moisture goes down through the sugar and drops from the hole in the small end of the jar. This makes the sugar perfectly white.

Treasure Hunt in Texas.

Eighty thousand dollars in gold and silver bullion is the sum which a band of fortune hunters in Texas are looking for; or, at least, they think they are looking for it. The story which started them on their search is that some years ago a wagonload of the precious metals was thrown into a deep spring near Carrizo, Tex., to prevent its falling into the hands of brigands. Only one man who was aware of the hiding place survived the fight with the robbers, and the present searching party was organized by him.

WOMAN AND HOME.

THE DRESSES WE WEAR.

Why Gowns Made at Home Lack Chic and Smartness.

Why is it that professional dressmakers, who are, presumably, women of little education, and no particular talent, can produce satisfactory gowns with a pronounced chic in cut and style that proclaims them at once to be "custom made," while the amateur, with greater taste and cultivated artistic intelligence and perception, should make such abortive creations whenever she tries to make her own dresses, is a problem that is often commented upon. "Home made" gowns are certainly not as smart as those "built" by professionals, and why not? Why cannot women of intelligence, who have straitened incomes, dress themselves and their daughters without calling in extraneous aid? It seems such a simple thing to do, especially in these days when the most reliable patterns of the latest fashions may be had almost for the asking, and materials cost next to nothing. What is it that stamps it, as it undeniably does, a dress made at home, as second-rate?

In the first place, the trade-mark, as it were, is wanting in amateur work. A dressmaker does everything by rule and rote, but this want of technical knowledge could be easily rectified either by taking the trouble to learn the trade, which is taught in comparatively few lessons, or by copying in detail the construction of a gown from a good dressmaker's. "Finish" is also one of the great essentials in which professionals score to advantage. Take the wrist of an amateur's sleeve, for instance, and that of a professional of good reputation. The difference is most marked. The bottom of the skirt, too, almost invariably betrays its origin, besides many other little details dependent upon the character of the dress. Finally, another marked difference between amateur and first-class professional work is in the generous use of material. The former never "skimps," whereas the latter, if she makes her own gowns, obviously tries to save every penny. In homemade millinery, especially, this skimpiness is very apparent. A young woman with a pretty taste in trimming bonnets who could easily have half a dozen hats for the price she pays for one, confesses naively that she is obliged to buy her headgear and give large sums for each confection, because she simply cannot make up her mind to buy as much ribbon or as many flowers as is really required.

"My hats always look economical," she declared, "but when I am buying ribbon by the yard I cannot bring myself to buy enough." So this season she pays $25 for a hat that she might easily have made herself if she would purchase the same materials.—N. Y. Tribune.

PARLOR FOUNTAINS.

They Are Operated by a Diminutive Hot Air Engine.

A small hot air motor is [illegible] quently employed in European houses to run a tiny water fountain in an aquarium flower stand, and the simplicity of its construction, as well as its arrangement within a handsome cabinet or underneath an ornamental stand, permits its being used in the parlor without appearing out of place. These hot air engines are constructed in different sizes, representing from one-sixtieth to one-fifth horse-power, and their price in Germany is very small, varying from nine dollars to $100 each, according to size and style.

HOT AIR MOTOR FOUNTAIN.

The hot air motor patented by M. Heinrici works without steam, and, therefore, many of the shortcomings of small steam engines are entirely obviated. The hot air motor has a remarkably regular and soft motion, quite contrary to the steam or naphtha engines, where each stroke of the piston occasions a shock. The main employment to which the Heinrici hot air motor is put is the work of a pump in the center of the flower stand, as shown in our illustration. The benefit of having a continuous jet of water in a room during the summer is obvious.

New Odors for Flowers.

It is a fad in Paris to perfume flowers artificially. Experiment has proved that it is possible not only to take away the natural odor of a flower, but also to make it yield a perfume derived from some other vegetable product. Some violets, for example, are perfect in form and coloring, but without fragrance, while others, very insignificant to look at, emit a delicious fragrance. The transfer of the odor from one species to the other has been accomplished. Those who have been most successful in this branch of horticulture refuse to tell their secret. It is said that the African marigold has been robbed of its disagreeable odor and endowed with a perfume that makes it much sought. The fad has been carried to the extreme of giving to the sunflower the odor of the rose and to the chrysanthemum that of the violet.—N. Y. Sun.

SWELL CYCLING SUIT.

One Ordered for a New York Girl Is to Cost $715.

The most expensive bicycle suit on record has just been ordered at one of the swellest tailors in New York.

The girl who meets the bill is worth a million in her own right, is an athletic beauty and a reigning belle in the ultra-smart set.

The suit which makes the bill is the most elaborate ever designed in this country. It is lined with silk, finished with jewels and will cost a lump sum of $715.50.

Two "Scott and Adie" shawls at $75 apiece will be employed in making the skirt and jacket. And, by the way, these English shawls are the very latest thing for any sort of fancy outing suit.

The skirt will be stitched half way to the knees, with the lines of stitching not over a sixteenth of an inch apart; this is the new device to stiffen the lower part of the skirt without adding to the weight.

The edges of the jacket are also stitched, and, together with the skirt, it is elaborately braided, which latter touch adds some $35 to the expense.

Bloomers and linings of suit throughout will be of silk—not less than 16 yards of silk to be used, which gives another item of $22.50. With the bloomers have been ordered half a dozen interlining of the finest lawn at $2.50 a pair.

Loose jackets are no longer the correct thing for the crack bicyclist. The newest waist is tight-fitting always,

SWELL CYCLING SUIT.
(This Outfit Represents an Outlay of $715.)

and worn with a series of vests and shirt fronts.

It sounds very simple just to say: "I shall order at least three vests for my new bicycle suit," doesn't it? Well, that is what the "millionairess" in question did, and these three vests are going to cost $25 apiece. The principal color in her suit is green, so she has ordered one vest of sage green, one of geranium [illegible] embroidered in black and gold, and one of white broadcloth, embroidered in silver. With these vests she will wear snow-white linen shirt fronts and black satin ties.

And $25 is not so very extravagant for a vest, when you stop to consider that the garment is made when the material is wet and has to be molded to the figure.

A Panama straw hat, fawn color and trimmed with scarlet and green, will add one $10 item, and bicycle boots of finest leather will add another of $18. Golf stockings in mixed greens and tans will be worn in place of the high top boot. An entire box of these stockings has been ordered, as it is difficult to match them exactly. Fifteen dollars a half dozen will buy the softest and best in the shops.

But the crowning extravagance of this particular "biking" maid is yet to come. Her belt of elephant green leather is clasped with a buckle of oxidized silver set with emeralds. The buckle is in the form of two bicycle wheels; the rim of each wheel is bordered with small green stones, a large single emerald forming the hub. This trifling decoration to adorn the "slender waist" of the pretty wheelwoman will cost treble the price of her wheel; that is to say, exactly $300.—N. Y. Sunday Journal.

Common-Sense Beauty List.

An authority on physical training for women gives the following directions for securing the best results, which naturally must be modified by individual characteristics and circumstances: "Sleep nine hours out of the 24, bathe in cold water, exercise five minutes daily with light dumbbells, drink a cup of hot liquid before breakfast, spend half an hour every day in outdoor exercise, make the best of bad bargains, and always keep your temper."

To Save the Tablecloth.

Nothing contributes so much to the soiling of the dinner cloth as the glass of water which during a meal is being continually picked up and set down again in a new place. Some thrifty housewives have adopted the custom of setting the glasses on tiny plates such as are so generally used for bread and butter nowadays. It has been found that a tablecloth keeps clean much longer by the use of these plates, and the idea is especially popular among boarding house keepers.

Nebuchadnezzar Sandwiches.

Most of us have partaken of those dainty little sandwiches consisting of a lettuce leaf or sprig of watercress or some other bit of green between the bread. But do most of us know the latest name for them? It's an altogether fit and taking title, and it has, besides, the flavor of Scriptural association. It is "Nebuchadnezzar sandwiches."

Mirth is short-lived; cheerfulness never tires.

POPULAR SCIENCE.

MACHINE THAT BREATHES.

And One That Imitates the Chest Movement of a Man.

Two curious instruments were recently placed on exhibition by the New York Academy of Sciences. They were simple little mechanical contrivances designed to show the action of the lungs and of the rib muscles when we breathe. By closely observing them any person may learn in a moment just how the inside of the chest behaves when we inhale a deep breath. They were made by Prof. John F. Woodhull, of the New York Teachers' college. One of these instruments consisted of an ordinary lamp chimney over the bottom of which was stretched a soft rubber sheet, and in the top of which was inserted a rubber stopper. Through the center of the stopper was a piece of glass tubing. On th end of the tubing, inside of the lamp chimney, was tied a little bag made of what is known as gold-beater's skin. Ordinarily the little bag of skin in the chimney hangs limp and loose like a col-

WONDERFUL MODELS.

lapsed balloon. If, however, the rubber sheeting is caught by the fingers in the middle and pulled downward the inclosed bag will immediately swell out to its full size. This is because pulling the rubber sheet makes the space within the lamp larger than the inclosed air can fill, or what scientists call a partial vacuum. The outside air rushes down the glass tube to the supply the vacancy, and in doing so swells the little bag out to its fullest extent. On the contrary, if the rubber sheet on the bottom of the chimney is pushed in by the finger, the little bag folds up limp again. By quickly pushing the sheet in and pulling it out again, the little bag inflates and folds, out and in, in perfect time to the action of the fingers.

Now, this is precisely the action that takes place when we breathe. The sheet of rubber on the bottom of the chimney corresponds to the diaphragm in the human body. The diaphragm is the large membrane which separates the chest from the lower part of the body. The little bag represents the lungs, and the glass tube is the windpipe. It is a mistaken idea with many persons that when we breath the air rushing into the lungs causes the lungs and the muscles surrounding them to expand. But a precisely reverse action takes place. We invariably move our muscles and diaphragm first, thus expanding the lungs, into which the air rushes to fill up the space which would otherwise become a partial vacuum. The action is all unconscious, and it appears to be the opposite of what it really is, but that is how it occurs, nevertheless. Thus a lamp chimney can be made to perform several actions of the human body. It breathes just as truly, and its lungs are a good facsimile of our own.

The other instrument looked somewhat like a band saw. It consisted of several sticks of wood arranged in the manner of the illustration. The cross pieces on the frame represented our ribs and rubber bands stretched on tacks on them acted precisely as do our rib muscles. Over the lower points of the frame was a piece of tape, which had been stiffened by starch. This represented the diaphragm. By moving the frame so as to contract the rubber bands the upper part of the frame (the lung cavity) became smaller. By stretching the bands it became large. Its imitation of the human chest movement is perfect, and the lesson it teaches should be appreciated by every one.—Chicago Inter Ocean.

New Symptom of Hysteria.

Hysterical persons often have a narrowed field of vision and a certain degree of local insensibility. These signs allow a diagnosis of hysteria and a connection with this form of neurosis of symptoms that might otherwise be due to different causes. Dr. de Strozewski, in La Medicine Moderne, notes another of these stigmata—the relative insensibility of the canal of the ear and of the nasal passages. With the least sensitive persons, the tickling of these regions with a strip of paper will produce a violent reaction. With persons affected with hysteria, no sensation of tickling, or a very feeble one, is felt, though the touch of the paper is recognized. This symptom exists in all forms of hysteria.

Electric Bleaching of Teeth.

The application of electricity has been eminently successful for the bleaching of teeth. After filling the nerve canal in the usual manner, the cavity is excavated and filled with cotton saturated with the bleaching solution. The positive pole is connected with the cotton in the cavity, and the negative to the wrist, and the current is allowed to remain for 20 or 30 minutes, according to the density of the stain. The process is painless and most effective.

Heard in the Studio.

"I'm your friend, old fellow," said the canvas to the artist. "If you get hard up and need money, why, just draw on me."—Tit-Bits.

EDISON'S LATEST IDEA.

Proposes a Wonderful Union of Phonograph and Kinetoscope.

Edison is said to have remarked: "I believe it will be possible to present grand opera on the stage of the Metropolitan opera house in all the perfection of its detail, with nothing more than a big sheet, a lot of phonographs, and a big kinetoscopic machine. I am not going to give up until I am successful," he says, "and every experiment I make brings me appreciably nearer the mark." While we have only a memory of the great actors of the past, the voices, acting and gestures of their successors may be preserved to us. Mr. Edison states that the kinetoscope was only one step in the great scheme which he has long held in mind. He has for years had many experts working out his plan. The great difficulty to be overcome was the metallic character of the tone of the phonographs and the change of its timbre to that of the human voice, so that the modulations of the singers and actors could be easily reproduced. Another trouble was the synchronization of the phonographs with the kinetoscope reproduction. It is much easier in theory than in practice.

A stage is to be cleared in a theater, sheets to be placed at the back and sides. Behind the curtains are a number of phonographs capable of multiplying sound a hundred times, one for each actor in the cast. Each is loaded with the dialogue of its particular player. In the gallery is a huge kinetoscope, containing hundreds of yards of film, upon which is the whole play, actors, costumes and scenery. The orchestra plays softly, and out from the wings steps an actress, slowly and easily. The play runs to the end of the first act, and the curtain falls to rise upon the second. From the film 375,000 distinct photographs at the rate of 48 a second are thrown upon the sheet, so fast as to seem like one realistic scene. The photographs are worked by electricity, connected on the same circuit that works the kinetoscope, the timing of a person's voice and actions perfectly corresponding. A man in his own house will be able to enjoy any play by his favorite actors.—Chicago Inter Ocean.

EFFORT OF A LEAP.

It Provokes a Contraction of the Whole Human Frame.

One would conclude, to look at the face of the accompanying figure, that it was the picture of an old man. We are assured, however, by Dr. A. Fournier (La Nature) that it is that of a 15-year-old boy, and that the same expression is assumed by everyone who makes the effort that is necessary in a leap. Says Dr. Fournier:

"The effort provokes a contraction of the whole frame; the trunk and the limbs, at the moment of the leap, form a rigid and curved body.

"The photograph represents a very high leap at the moment when the impulse is given; it shows the body in full effort and in entire contraction. We may imagine the violence of the effort by observing the countenance of the young lad (15 years); the nose, the lips, the eyebrows, the pupils, the

FACE CONTRACTION DURING A LEAP.

forehead, the neck, all are violently contracted. The effect is the more accentuated in that the energy of the effort has congested the face.

"One would say, to see this figure, that the leaper had suddenly felt great pain and that he was about to burst into tears.

"This photograph . . . is interesting, as giving the contracted appearance of a leaper at the precise moment of the effort of his leap.

"It is certain that in this manner a series of effects that would be at once surprising and instructive might be obtained with the aid of photography."

Immense Loss of Power.

Prof. C. H. Benjamin, of the Case school of applied science at Cleveland, O., has given a detailed account of his recent experiments in determining the loss of power through friction in the transmission by belts and shafting. These were made in 16 different factories. In a bridge material factory 80 per cent. of the engine's power was lost. In a planing mill the loss was 73 per cent., and in a sewing machine factory it was nearly 70 per cent. It was 77 per cent. in a stamping mill, and 65 per cent. in a boiler and machine works. The average loss for heavy machine shops was a little over 62 per cent., the average for light machine work was about 55 per cent.

Machine for Slicing Rock.

A new machine, invented by Prof. Dwight, of Vassar college, is said to slice rock to the thickness of one-fiftieth of an inch. This is accomplished by means of a series of tin disks with edges charged with diamond dust. A paleontologist objects to destroying a fine specimen by breaking it with his hammer and often the points of greatest value are not shown upon the surface of the rock. The beauty of many varieties of stone increases as its density is lessened. Prof. Dwight's invention makes it possible to study the composition, grain and history of rocks in a manner never before supposed possible.