New Things Not Found in Any Books

How RIGHT BREATHING Makes You LIVE LONGER

Increased LUNG CAPACITY Gives You Richer BLOOD and Protects You Against DISEASE

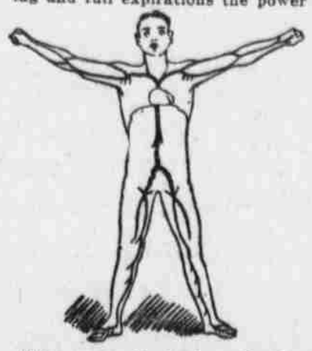
By Dr. FRANZ KIRCHBERG, of Berlin

"THE breath is the life," is an old saying, but it is a truer one that if you breathe right your life will be longer and freer from disease. There is no more important function than breathing. Every one has to breathe in order to live, but the large majority of persons breathe imperfectly, and thereby give rise to many diseases which shorten their days.

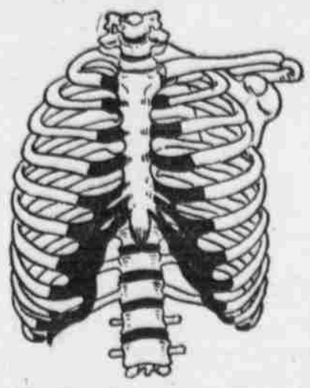
If men and women would stop to think that the condition of the blood is directly dependent upon the way they breathe they might give more attention to this important subject and learn to breathe right. They ought to know that every time they breathe they take in the oxygen which is carried by the blood to all the tissues, after passing through the lymph, and that the better they breathe the better the tissues are nourished and purified.

The oxygen of the air that enters the lungs is transferred directly to the blood, which when returned to the heart is pumped all through the body. How important this is will appear from the fact that the blood passes all through your body in half a minute. The adult inhales air from sixteen to twenty times a minute, in direct relation to the pulse-beat, each inhalation lasting four pulse-beats. A child less than a year old inhales forty-four times a minute, and gradually decreases the number of inhalations. If we exert ourselves we breathe more rapidly, and for this reason workrooms ought to be especially well ventilated, and so should dancing halls and other amusement places where large crowds gather.

When breathing quietly we inhale about thirty cubic inches of air, so that in a minute the amount of air inhaled is about five hundred cubic inches. After each exhalation there are still more than three and a half quarts of air in the lungs, but a part of this may be blown out by special effort. This amount averages ninety cubic inches, being termed the reserve air. Then, of course, the inhalation is deeper, and we draw in 120 cubic inches of air. If we practise deep breathing and full expirations the power of expulsion and inhalation can be increased, because we are gaining greater control over the muscles which regulate the breathing process.



"You secure the best results from the air you breathe by exercising in an upright position. When you exercise the muscles press upon the veins and drive the blood toward the heart."



The Bony Structure in Which the Heart and Lungs Are Enclosed. The Black Spots Show the Cartilaginous Forward Ends of the Ribs. When These Become Hardened by Lack of Exercise, Right Breathing Becomes Very Difficult.

These muscles are all important, and it is largely due to their lack of development that we breathe so poorly. The ribs are joined by intercostal muscles, the fibres of which extend downward and forward and downward and backward. These muscles raise the ribs and enlarge the chest, giving room for the lungs to expand. The diaphragm is flattened at the same time, so that there is very much more space in the cavity when we take a breath than when we expel the air from the lungs.

All our training should be directed toward gaining control over these muscles and developing them so that they act automatically and give us the greatest possible room for the expansion of the lungs when inhaling. There are a number of muscular exercises which ought to be taken regularly to develop the intercostal muscles.

What is desired is to increase the "vital capacity," as it is called, or the amount of fresh air which can be inhaled at one effort. This is measured by instruments, so that the exerciser may know what progress he or she is making.

It is a mistake to think that women and men should breathe differently. Women breathe with the upper parts of their lungs, because of tight or ill-built corsets, when they should fill the entire lung. Men are apt to breathe only by relaxing of the diaphragm, which is a lazy way and does not fill the tops of the lungs at all.

Deep breathing exercises may be taken in a variety of positions—standing, sitting, lying down on the back or on the face—but conditions should always be the best, not the worst.

The old idea that you must always breathe through the nose is now an exploded theory. It is true that the nasal passages serve as an excellent guard to the throat, keeping out much of the dust, and warming the air if it is too cold. But for free inhalation the mouth should be partly open, only we should be careful not to exercise in a room where the air is too cold or filled with dust.

If you raise the shoulders when trying to take a deep breath you are not breathing properly, for you are diminishing the size of the chest, not enlarging it. If the breathing exercises are taken by young persons, they go far toward gaining a greater expansion of the ribs, for their forward ends are cartilaginous and may be stretched gradually by proper exercises. If we never breathe deeply the cartilage becomes more or less hardened and fixed, and we find great difficulty in expanding the chest when we wish to do so.

"When you sit all crouched up the veins are so cramped that they can not perform their proper functions."

The muscles between the ribs when well developed make deep breathing easy, almost automatic, and we do not tire, as is the case when we first begin the training.

It should not be forgotten that our posture has much to do with the securing of the best results from the air we breathe and the blood that is enriched by the oxygen from the air. When you have been sitting for a long time your first motion when you stand is to stretch, and the physical reason is that you wish to release the blood which has been coursing slowly through the veins and give it a chance to return to the heart and be renewed from the arteries. When you exercise a muscle it presses upon a vein or veins and drives the blood toward the heart. If you sit all crouched up, as in the posture of grief, the veins are cramped and cannot properly perform their function of returning the blood to the heart for renewal.

All of these considerations must be kept in mind if we are to gain the greatest possible benefit from the air we breathe.

We must increase our power of inhalation, so that even when breathing quietly we take in much more air than the untrained person.

We must develop the muscles between the ribs and those controlling the diaphragm until they work automatically and we actually inhale without effort as much as the untrained person can take in when straining every undeveloped muscle.

In this way we will increase our lung capacity, enrich our blood, and especially guard ourselves against all kinds of lung troubles, from bronchitis to tuberculosis.

ROCK the BABY LENGTHWISE

THE latest researches tend to prove that the rocking of babies to sleep is all wrong—but the reason is that they are rocked the wrong way. If the cradle were suspended at the centre and swayed up and down there would be no injury to the child and an increased resting of the nerves.

In Scotland they have devised a bed which oscillates from head to foot, but not from side to side like the old-fashioned cradle. This particular bed is not for children, but for grown persons who are suffering from insomnia.

No attendant is required to sway the bed, but there is an automatic device by which the patient may start the machinery which continues without further effort. Experts in nerve diseases have found the effects of this bed's motion very remarkable in soothing the jangled nerves and inducing sleep.

No one has been able to explain why this motion is so soothing, but if you stop to think you will remember that your grandmother often rocked herself to sleep in her rocking chair, which had precisely this same movement. In this way it appears that we are going back to the rocking chair as one of the soothing influences upon disordered nerves.

YOU MIGHT TRY--

When Boiling Potatoes.

ADD a little milk to the water in which potatoes are boiled. It will prevent their turning dark and improve their flavor.

To Remove Ink Blots.

INK blots can be easily removed from books by covering them with salt and rubbing gently with the fingers.

Keeping Pickles in Glass.

PICKLES should always be kept in glass—never in glazed ware, as the action of the vinegar on the glazing is liable to form a poisonous compound.

A New CAT That EATS LAMBS

A NEW type of cat has developed in Australia. It is regarded as one of the most destructive animals of that country. They are believed to be the descendants of domestic cats which have been turned out into the bush by their owners, have run away or have been turned out into the bush as a supposed enemy of the rabbit.

As they have practically no natural enemies in Australia, they have multiplied at a great rate, and are now established throughout the country. They live on small animals, lizards, opossums, and even young lambs, as well as rabbits.

In the Macquarrie Islands they were very numerous, and did much damage among the sea-birds which supply the sealers with eggs. It was therefore decided to introduce dogs to kill them off. As soon as the cats had disappeared the dogs attacked the seals, and had in their turn to be destroyed. Where the cats have become numerous, the smaller varieties of ground game have diminished.

The cats seemed to be reverting to a specialized type—a bloched tabby. In Lord Howe Island they are a very dark, mottled gray, much larger than the average house cat, specimens up to twenty pounds in weight having been shot.

Educating the Filipinos to Become Prosperous U. S. Citizens

By J. W. OSBORNE,

Supt. of Schools, Pompango, P. I.

SCHOOLS, baseball and basket ball are some of the fruits of civilization that have followed the American flag into the farthest corners of the Philippine Islands. Fifteen years ago, when Admiral Dewey took these islands and our soldiers were landed on their inhospitable shores, battle after battle was fought with a gun in one hand and a school book in the other.

Going inland and up and down the coast, our army left a trail of schools of one sort and another in its wake. Not such schools as we have even in the most isolated parts of the United States, but schools for all that. As the army would pass onward, a small company of men under one or two regular officers or several non-commissioned officers would be left in each village. One or more of these men were detailed to teach the young Filipinos first, English, then the three R's. Their school building, but a thatched hut with a dirt floor or worse, would have to be made clean and sanitary before use was possible, and frequently these enforced house cleanings were greater sensations than the arrival of the soldiers themselves.

In between times the teachers would occasionally have to drop their school books and march forth to quell a rebellion or to disperse a crowd watching a cockfight, the national—no, I should say the former national—game of the Islands. The present national game is baseball.

While the army was doing its best to teach English and the three R's with one hand and a respect for the power of the United States Government with the other, a department of education was gradually being developed under civil jurisdiction. It would take too long to go into the early trials, both at home and in Manila, which this department suffered. That it has made good and that it is to-day one of the greatest factors for good in the Islands goes without the saying. It is of results that I am now telling, not of the paths by which we reached them.

The Filipino is eager to learn. He will make any sacrifice to acquire an education, particularly one that will place him on a level with the American. There is no compulsory education in the Islands, but there are not nearly enough accommodations for the pupils who apply. Playing truant is an undiscovered vice.

We have long since gotten beyond the three R's stage. Perhaps our success has been largely due to the fact that we are going very deeply into industrial education. Of course, the fundamentals are not neglected. But as a pupil advances toward the higher grades he or she is given every opportunity to learn an industry of some kind. The Filipinos have not been an industrial people, but they are progressing wonderfully in nearly all branches. We place tremendous emphasis on this form of education, and I believe that perhaps the States might learn something of us in this respect.

Before going further into what we are accomplishing in our schools, I must explain our system and give an idea of the size of the problem the United States faced in 1898. There are two school systems in the Islands—the civil system, which has under its jurisdiction thirty-five provinces, including Manila, and the Moro system. The Moros are still under quasi-military rule, and because of this and their warlike propensities their schools are under the military authorities of Mindoro. The Moros occupy the island of Mindoro. Each province is a school division, Manila being a division by itself. Each division has its own school superintendent.

The head of the school system is the Secretary of Public Instruction; he is always a member of the Philippine Commission. Under him is the Bureau of Education. There are 4,600 schools, with an enrollment of 600,000 students, and a waiting list of as many more. In charge of these schools are 650 American teachers and 9,000 Filipino.

In assuming the education and development of the Filipino, it behooved those men in charge of the Islands to plan a course of education which would make of the Filipino the best kind of a citizen for his own country, not for the United States. While we planned to hand on to him certain American ideals, we were not planning to make an American citizen of him. We could not, unless we could change not only the character of the Filipino, but the character of the Islands and its climate. We have therefore—for instance, in our courses in Economics—treated this question from the viewpoint of the Islands alone. We had also before us the problem of arousing in the Filipino himself the desire for knowledge. This desire has far exceeded our ability to gratify.

We have the same special problems confronting us that you have in the States. We have our schools for the blind, and for the deaf and dumb. These schools are in Manila and the pupils are, of course, resident. Filipino parents are opposed to having their children live away from home, and one of our greatest fights has been to overcome this feeling. That we now have several hundred resident pupils show that we have made some headway.

The School of Arts and Trades and the School of Household Instruction fill a most vital need.

Throughout the Islands we have thirty-eight high schools, and in Manila is the one normal school. So great is the demand for teachers and so dominated are the natives by the desire for an education, that many of our students become teachers at the end of their high school term.

While our primary and intermediate schools give the usual groundwork in the elemental subjects we do, as I have already said, devote the greater amount of time and attention to the industries. We have had to begin at the very beginning, but our progress has been remarkable and I am sure that many an American farmer might learn much of value to himself from the Filipino.

The Filipinos have much natural mechanical ability; they make excellent engineers and chauffeurs. This is all the more remarkable because this quality was never called forth in all their centuries under Spanish rule. The age of machinery, however, in the Islands, is still to come. I do not think that we always give the Spanish credit for some of the civilization which they did force on the Filipino. That they could read and write at all, that they even knew as much as they did when we took the islands, was due to the Spanish. Their basket making, weaving and lace making dates from 1790. The Filipinos are a Malay people. There was an indescribable difference between the Malay in his raw state and the Filipino when he came into our possession.

They are, of course, not a race that will absorb entirely the education of the Anglo-Saxon races. Therefore our aim has been to fit their education to their surroundings and ability. We have tried and are trying to be as individualistic in our training as possible.

Farming is their chief industry. We therefore give the greatest attention and a large share of our annual appropriation to the furtherance of the scientific farming courses. Our plant is very practical and that it is very expensive is a foregone conclusion, but we know that in the end it will pay a hundred fold. Every barrio school has its farm garden. These barrio schools correspond practically with the district schools in the States.

The Filipinos are a rice eating race. We are endeavoring to get them away from this diet and are introducing other articles of food which can be grown by them. The farm schools experiment along these lines and at the harvest time we hold exhibitions and in this way, as one might say, we popularize these new foods. If they are ever to come to the front in a commercial way, we must give them more foodstuffs.

We have our students use many of the farming implements that are now used in the States, but there are others which are adapted to the country or to the people. Our exhibits also show them that these farming schools pay in real money, for our sales at the last exhibition amounted to over $20,000.

To induce them to add corn to their diet we offer prizes to the student or to the farmer raising the best crop. Some of the Filipino provinces have never raised corn. They consider it low caste food, the food of the very poor. But beginning with our students we teach the value of it to their parents through them. Once a year we hold this corn demonstration. We hold an athletic meet at the same time so as to draw a large crowd. The corn yield is placed on exhibition and the girls from our domestic science classes cook the corn in every known way. Last year they prepared it in twenty different ways. We shall use this same method with other foodstuffs that we decide to introduce to the people.

The Philippine School of Arts and Trades and the usual trade schools scattered throughout the islands, give courses in all forms of manual training. The boys learn carpentry, printing, house building and engineering. They make all kinds of furniture. They weave hats and make carriages and light wagons.

Two-thirds of the furniture used in the schools to-day is the product of our trade schools. Our pupils do not make small models. They make the real thing and at the end of the school year when we hold our exhibit, these things are sold at good profit. Last year we took in $65,000.

It is becoming always more necessary for the Filipino families to have more income. The high cost of living has affected the islands of the sea as well as other communities. Perhaps it would be more exact to say that as the desires of the people for education have spread, their wants have increased also. Therefore we are making a great feature of providing some home employment for the women. In Manilla we have established a school of household industry where courses of six months duration are given in lace making and embroidery. At present we take 150 women of mature age from various parts of the islands and place them in this school for this period. They take to these industries naturally and become very proficient in their work in the six months. Then they return to their provinces and instruct the young women of their villages in these arts. All expenses are met by the Government. As time goes on this experiment will undoubtedly make a great and lasting difference in the home life of people.

Philippine products, whether from the home or the workshop, find a ready sale in Manila and in this country. We also have what we call a pensionado system. Two hundred and thirty young men and women from the various provinces are pensioned by the Government so that they are able to attend the Normal School, the School of Arts and Trades, and the College of Agriculture, which is at Los Banos. Most of them remain only a year, then return to their provinces to teach their fellows in the industries and also in farming. This pensionado system is one of the most valuable agents in bringing home to the Filipino the value of education. There are by the way usually from fifty to one hundred of these pensionados at school or college in this country. They are not included in the 230 already mentioned.

HOW WE PUNISH MOTHERS FOR LOSING THEIR HUSBANDS

THE case of Mrs. Maggie Ustich, of Chicago, calls attention strikingly to the manner in which America punishes mothers for the fault of losing their husbands or of being deserted by them.

We have alleviated this kind of hardship to a considerable degree in Chicago by the Mothers' Pension law, but for certain reasons this remedy was not permitted to be used in this case.

Mrs. Ustich, whose husband is in the insane asylum, was taken in charge by the United Charities of Chicago, together with her five children. For nearly two years now she has been the recipient of this scientific treatment, but is still helplessly dependent.

The net result of all this elaborate, painstaking and unselfish effort has been that through the mother being required to leave her children alone while she went to work, the baby pulled the gas tube off the range, two of the children and a neighbor's child were killed, and the mother is still dependent upon charity.

During all of this heartbreaking, nerve-racking treatment, as disclosed by the records of the United Charities, the family was constantly upon the ragged edge of disaster, and the mother's strength was dissipated through never-ending worry and apprehension. Her children were in the Home for the Friendless, exposed to contagious disease. She was shunted from one boarding house to another. Her furniture was lost, and when found it had been greatly damaged. She had trouble finding employment, and was constantly sick and discouraged.

It is apparent that this family could have been easily provided for and both the mother and the children been given the chance in life to which they were entitled. By giving Mrs. Ustich a Mothers' Pension of $10 per month for each child she would have had her mind set at rest and been free from worry, and could have kept her children at home and in school, where they belonged—and have stayed at home, where she belonged, instead of washing in some one else's basement while her children were left to die.

In my opinion organized charity is opposed to sound principles and must inevitably fail.

There are two ways of treating poverty—they are as far apart as wisdom and folly, as right and wrong as success and failure—the one is to cure by removing the cause; the other is to alleviate by sweetening the results.

The first is the method adopted and advocated by the National Probation League—not only for the treatment of poverty, juvenile and adult, but also in the treatment of crime. It is the great modern idea.

It was the idea which marked the difference between French failure and American success in building the Panama Canal. The French sought to cure by medical treatment the yellow fever which killed its workmen—the Americans destroyed the mosquito which produced the disease. This is the principle upon which is constructed Probation and Mothers' Pensions—the two greatest preventives of crime and poverty ever put in operation by legislative enactment.

The other method of dealing with poverty—that of lightening somewhat the heavy load of the sufferer for an hour, a day or a month, as the emergency may demand—is the usual method of charity. Organized or unorganized, a method is good as far as it goes, and perhaps necessary in many cases as an aid to something better, but which of itself is like a lost traveller walking in a circle, or a boy riding a hobbyhorse—plenty of motion but no progress.

It is useless for charity, whether it be organized or unorganized, to claim the ability to remove the cause of poverty in the vast majority of cases. To do this two things are requisite—knowledge and power.

To the knowledge of what is necessary to be done must be added the power to compel compliance.

The charity worker finds on every hand conditions which unless removed or remedied render utterly ineffective and inoperative any attempt to put an end to the applicant's dependency. Moral suasion, the only weapon available, is generally useless to bring about such results. If threats are made or the courts appealed to, charity loses its beauty and significance, and becomes hateful to its beneficiary.

Herein lies the great advantage of Mothers' Pensions, administered by the courts, which possess both the ability to acquire and knowledge of the facts and also the power to enforce its directions.

Because of its limitations in this regard charity, no matter how fully organized, can never be more than a temporary expediency in the treatment of poverty; a lifebelt to sustain the man who cannot swim until a lifeboat rescues him.

Nor is it desirable that charity should aim to do more than this—long-continued charity pauperizes and demoralizes. Morphine, to temporarily relieve pain, is valuable, but as a steady diet it is not to be recommended.

Charity should, therefore, be voluntary and spontaneous when the need is presented. Organized charity which becomes professional not only robs benevolence of its chiefest charm, but suggests to the recipient a false and demoralizing hope of permanent assistance.