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Open-Air Playgrounds, Open-Air Hospitals, Open-Air Gymnasiums and Now Open-Air Schools to Keep Children Well and Happy.

THE importance of breathing correctly and of breathing fresh air is being taught more and more by medical science. The installation of open air schools for children who are predisposed to tubercular diseases has already been successfully tried in Chicago, in New Haven and in about half a dozen other cities throughout the country. Abroad the air and sunshine treatment for little ones is well under way and has been described in the pages of this newspaper. The next logical step, that of an open air school for healthy children to keep them healthy, has been taken up in Philadelphia.

At Mt. Airy, one of that city's fashionable suburbs Miss Ellen Stannoy Mills has begun a roofless institution with quite surprising results. The Board of Public Education is watching the experiment and is ready to follow her lead. The schoolhouse of the future, it seems, may be built without walls.

Medical science now realizes that all vitality and energy come from the air we breathe. The food we eat is simply inert masses of material which the air makes useful.

The object of the new method is not to make the pupils healthier, but to improve their scholarship by increasing their vitality. One thing that makes a child backward is inattentiveness, and anything which tends to distract the student's attention interferes with his progress. Most teachers have observed how most of the children in a close room will cast yearning glances towards the fresh air outside instead of keeping their eyes on their books.

Even the most studiously inclined children feel the depressing effect of a closed room, and no matter how scientifically the room is ventilated will turn toward the windows every now and again to sigh for the open air and the freedom which they associate with it.

This is nature's way of prompting the child to go out into the open and seize the health and vitality that are there.

These considerations among others suggested to Miss Mills that perhaps better results could be obtained if school were taught out in the open air instead of in a study room, and she determined to give the idea a trial.

Her school is attended by the children of wealthy Philadelphians, and she had difficulty at first in persuading parents that her scheme was not a foolhardy one, especially in view of the fact that the winter was then just coming on. The teacher persisted, however, and started her unique establishment at Mount Airy, a location which was most appropriately named. A pergola-like arrangement was constructed for the use of the school, the seats and desks being

arranged in the usual manner on the floor of the structure and the roof being supported solely by upright pillars. There were no walls whatever, and consequently although sheltered from rain and snow by the roof which overlapped the flooring, the school was in reality in the open air, and the sense of confinement from which most school children suffer and which results in restlessness and inattention, was singularly absent.

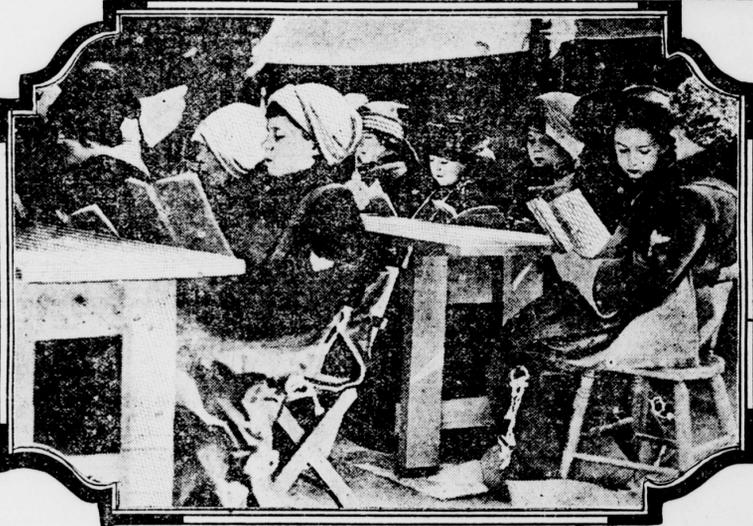
The problem of protecting the children against the cold was solved in a most original way. Artificial heating was, of course, out of the question, but Arctic customs were drawn upon to answer the purpose.

Each child was literally tied up in a huge bag which came up above his or her waist and was tightly bound under the armpits. This kept the feet and legs as warm and as cozy as if they were but a few steps away from a four-smelling, noise-making steam radiator.

The bags were made of stout waterproof canvas lined with blanketing, and were made in various sizes so as to fit any child.

The fresh air institute started with about twelve pupils. Every one of them was already abedoned, although there were one or two who had shown considerable backwardness. It didn't take long for the children to get accustomed to their new surroundings,

A Study Hour In the Open-Air School.



Play Recess At the School.



For Hours the Little Boys Read and Study Out Where the Fresh Air Can Keep Their Brains Clear.



RESTAIR BRAINS



How Recess Hour is Spent at the School.

and Miss Mills found a most satisfactory improvement in their studies.

The curriculum was somewhat changed to suit the new conditions, short periods of work being alternated by short periods of play. It was a simple matter for the children to step from school directly into the open, and no time was lost in the alternating process. The success of the experiment lay in the fact that when the little ones returned to their work they paid attention instead of hankering after the fresh air, which, under the old system, they would have had to abandon for the time being.

The new scheme sharpened the wits of the dull children and rosy cheeks, bright glistening eyes and happy countenances were the rule.

The new school soon became very popular and had to be extended. There are now five teachers besides Miss Mills and over a hundred children are now enjoying the benefits of the unique establishment.

In the rear of the school a big open bungalow has been erected as a playhouse. Like the school proper, it is absolutely unenclosed. Callisthenic exercises are indulged in and the children are allowed to play any innocent game that appeals to them. They have a big wooden slide, down which they come tumbled over each other like veritable sacks of coals. They have swings and other apparatus that make the half hour of play seem like a trip to the seashore.

Benefits of Open-Air System.

There is no danger of catching colds under such a system as this and the children's appetites have increased enormously for their books, as well as for their meals.

Deflated little heads, drooping eyelids, premature visits of the sandman, slouching postures—all of these are conspicuous by their absence at Miss Mills' school, where every child is alert and the vim and tang of the crisp air stimulate mental as well as physical exuberance and make play of work.

Now that the rigors of winter are over, the Arctic "sleeping bags" which were used to keep the children warm and wrapped up have been discarded and the children sit in the open air without any other protection than their ordinary clothes, but the hardy little youngsters don't need it.

The value of open-air life is now generally recognized, but save for the congenial atmosphere of the open air, no attempt has been made to provide open-air school accommodations for healthy children.

ed cities may be readily solved, for instead of the costly edifices now deemed necessary for the modern school, every acre of unused land can readily be utilized as an open-air academy. The vast sums of money now expended for erecting and maintaining enormous school buildings might be used instead to increase the number of teachers and to advance their salaries.

Truant officers would be kept unusually busy. It is to be feared, for the wall-less schools would make it absurdly easy for the unruly element to escape when study became too irksome. In the case of such delinquents, however, special schools of the old variety could be provided.

In various sections of the country open-air institutions for the care of the sick have frequently been established in an effort to block the path of the great white plague. Not only open-air hospitals and sanitariums where the patients could sleep with the sky as their only roof, but also open-air schools have been maintained for the same purpose.

Open-Air Hospitals and Schools.

Many charitable institutions have equipped sea-going vessels with the same laudable object. The tiny victims of disease are put on board and taken for a long sail on the water.

Those who are too sick to study are allowed to play and amuse themselves in any way they choose, but school teachers are on hand to "improve each shining hour" for those who are sufficiently well to put their minds to serious study.

Miss Mary Harriman, daughter of the late railroad magnate, recently equipped an old ferryboat in this way and provided accommodations for men, women and children. The patients got fresh air, pure milk and new food and the youngsters were coached in all the intricacies of kindergarten work.

The floating hospital maintained for years by St. John's Guild is operated on the same principle. Every day during the summer months the Helen C. Julliard, as the boat is called, takes care of some 1,000 ailing children, feeding and teaching them in the open air. At Leyzin, in the High Alps of Switzerland, there is another institution based on the blessings of pure air. While this establishment is conducted mainly for the benefit of ailing children, the head of the institution, Dr. Henri Rollier, the head of the institution, is an ardent advocate of the curative properties of fresh air, but he believes it is just as important to breathe

correctly as it is to have proper air to breathe. The man who breathes properly in a poor atmosphere is better off than the one who breathes incorrectly in a good one, is the doctor's theory, and while the bracing atmosphere of Leyzin would seem to answer all purposes, he insists upon a strict adherence to his rules for scientific breathing.

He has secured some remarkable results. Flat-chested children have been filled out, anemic children have improved their blood supply, consumptive children have waged successful war against the microbes which were undermining their constitutions.

The able-bodied children have likewise shown great improvement in their school work. The bracing atmosphere and the new methods of breathing have turned the dullard into an unusually bright and alert youngster and have improved the dispositions of all.

While enterprises of this character do an enormous amount of good, they do not quite fill the bill according to Miss Mills' conceptions. "It is better," she says "to utilize fresh air as a preventive of disease than as a cure for it, and the best way to bring up sturdy children is to keep them in the open air while they are still well and not wait until they are laid low by disease."

The School of the Future.

"People are beginning to realize that fresh air is the staff of life and is required not only for a healthy body but for a healthy mind as well."

"When I started my school at Mt. Airy my project was looked upon as visionary and many over-timid parents refused to send their children to me for fear that they would die of cold. It is hard to make some people understand that it is not cold that harms, but draughts. There is less chance of contracting cold in my open-air establishment than in the best-ventilated school-room in the country."

"The children are warmly clad in winter-time and they are never in danger. Besides that, their skins soon become hardened to the exposure to the air. The system of alternating short periods of work with similar periods of play is by no means new, but I find that it works remarkably well in an institution like mine, where there are no stairs to climb up and down, and where, when school is out, the children can just step right off into the open. It saves time and is extremely simple. The open-air school idea will rapidly spread and will eventually entirely displace the old-fashioned school-house."

One of the Little Girl Students Buttoned In Her Eskimo Bag.

THE WAY THEY NEVER LOOK PICTURES

Every photograph is taken, Dr. Wood has utilized what are known as the infra-red and the ultra-violet rays.

Although these rays have long been known to scientists by their effects, no human eye has ever seen them, nor have photographs ever before been made through their agency.

Every ray of light is made up of a succession of colors known as the spectrum, the most common form of which in nature is the rainbow. The white light seen only a very small part. On the one side next to the red edge is a ray which cannot be seen, but which, for want of a better title, is called the infra-red. On the other side of the rainbow, or spectrum, next to the violet is another invisible ray, called ultra-violet.

It is these rays that Dr. Wood has now caught and segregated. The ultra-violet ray will pass through a sheet of metallic silver, but the clearest window glass bars it out. A man who could see only by ultra-violet light would be blind in an ordinary room, even though the sun

Does Matrimony Change the Voice?

"YOU can tell people who are married by the way they speak to each other."

This was the point made by a well-known dramatic critic at an informal gathering of a theatrical association recently when the subject of debate was: "Does the stage mirror domestic life?"

"The art of love-making on the stage," said the critic, "is a highly-developed art, and reflects the lovers of real life almost exactly. Mr. George Alexander, Sir Charles Wyndham and Donald Brian are all perfect exponents of love-making in their respective styles."

"But I have never seen actors or actresses who could in any way catch the peculiar intonation of the voice which marks the conversations of married couples, be they young, old, or middle-aged."

"It must be apparent to any one who studies or observes the people he mixes amongst that a wife, in addressing her husband, invariably alters the tone of her voice, giving it a note of air of intimacy or proprietorship, just as a husband does when he addresses his wife. This peculiar change of voice our best actors and actresses fail to reproduce on the stage, even though they happen to be married themselves."

"At a stage garden-party or dinner-party the stage wife addresses her stage husband in exactly the same tone of voice as that in which she speaks to the guests. This is never so in real

life.

"Even among brothers and sisters something of this peculiar note of intimacy is to be detected. Between strangers such a note would seem almost casual, slighting or off-hand, but the relationship existing makes it domestic, and it is domestic, which is difficult to describe and, apparently, impossible to imitate."

"While this is so, the stage can never hope to mirror domestic life. I have seen many stage scenes which were meant to reflect the home life, but I have never seen a convincing one, chiefly because husbands and wives, brothers and sisters talk to each other in a way that no one outside the domestic circle can imitate."

"The accents of love, passion, anger, revolt, remorse, tragedy and despair are all capable of reproduction on the stage, but the simple, familiar home conversation defeats our best actors and actresses."

"Now that Donald Brian is married it will be interesting to watch whether his domestic experiences will, in any way, change his methods on the stage. Other married actors have failed to reproduce the 'married voice' on the stage, and the probability is that Mr. Brian will not profit by his matrimonial experience in that respect, either."

"The same thing applies to actresses. No matter how often they have been married, they are never able to give the correct 'married tone' on the stage."

were shining through the glass windows. But if he raised the window sash, or if thin sheets of silver were substituted for the glass window panes, he could see both inside of the room and on the street, although the silver would darken the room to the ordinary eye.

If ultra-violet will not pass through glass, how could Dr. Wood use it for photography? He filtered it through quartz crystal heavily coated with silver. This forms the lens of the camera, and the other rays, it admits the ultra-violet, and the impression of outside objects is thus produced on the sensitive photographic film or plate.

Curious results were thus obtained. A boy standing in the bright sunlight casts a dark shadow, and this shadow is plainly shown in an ordinary photograph. An ultra-violet photograph shows the boy, but the shadow appears black in ultra-violet light. Thus Dr. Wood painted some letters with Chinese white paint on a sheet of newspaper. In the ultra-violet photograph the black ink appeared in jet black. Perhaps these black spots are zinc-oxide like the white paint which looked black like the ultra-violet eye.

Photographs taken with infra-red rays are even more weirdly beautiful than those obtained by the ultra-violet. They resemble bright moonlight, though, the branches of trees and other details which would not be seen in moonlight are vividly brought out. Shadows which disappear in the ultra-violet are deep black in the infra-red. If the sky is clear it appears black, but clouds or haze illuminate it.

Dr. Wood is an unusually bright and interesting man. He is a New Englander by birth and a few months under forty-two years of age. He has won numerous degrees, fellowships and medals.

Amongst his many ingenious inventions is a "fish-eye" camera to be "snapped" under water, showing how the world looks to the fishes.

Another invention of his lately constructed revivifying mercury mirror for a telescope. To grind a perfect paraboloid reflector for a refracting telescope has always been a difficult and costly feat. Dr. Wood constructs a temporary one by revolving a dish filled with mercury, the rising of the mercury on the edges and depression in the center forming a paraboloid reflecting surface, which is just as effective as the more expensive reflectors hitherto used. A peculiar property of this mirror is that it does not produce inverted images, like an ordinary looking-glass. For instance, if you stand on an ordinary mirror, your image is revealed with head down and feet up, the soles of your feet covering the upturned feet of the image. In Dr. Wood's mercury mirror as appears from the photograph shown on this page, this effect is not produced, the image being revealed in the same position as the object.

Not His Head In a Bowl, Like the Prophet John's—but the Odd Reflection of Professor Wood In His Mercury Mirror

—AND—
How the Camera Shows a Landscape When Its Picture is Taken by Infra-Red Rays—Which the Eye Can Never See.

