

HUMAN BODY'S MARVELS

The Most Wonderful Machine in the World--No Engine Can Perform as Much Work

In the ancient world there were seven wonders. In the modern world we have in reality only one, and that is the human body, writes Dr. W. R. S. Latson in The New York Tribune. Regarded from a purely mechanical viewpoint, the human body is a superbly efficient instrument, infinitely complex, exquisitely delicate, and yet powerful, enduring, and adaptable beyond belief. The human body is a microcosm of the universe, a miniature world in itself. It embodies within its composition, its structure, its operations, everything that is to be found anywhere in the world outside of itself.

For instance, the body contains all of the important chemical elements. Nearly three quarters of its weight is made up of oxygen, that most important and universal element. Then there are the other gases, nitrogen, hydrogen, chlorine and fluorine. In addition to these gases we find carbon, calcium, phosphorus, sodium, sulphur, potassium, magnesium, iron, copper, lead, and silicon, lithium, mercury, arsenic and other solids. The first five named, the gases, are sufficient in quantity to fill a tank of about four thousand cubic feet capacity--say of a size twenty feet long, ten feet high and twenty feet wide. The solids in the body, such as the carbon, lime, (calcium), silicon, sodium, potassium, magnesium, are all in the ground on which you walk.

SOME OF THE BODY'S CONTENTS.

The body contains enough fat to make about one hundred candles, enough soap to keep its own surface clean for a month, enough sugar to do for a family meal, and enough salt to supply the family for a month. It contains only a little iron, just about enough to make a couple of small nails; but it has enough hydrogen gas to fill a balloon that would actually lift the owner into the clouds. The human body also contains enough carbon to make about three thousand lead pencils, or in the form of a rod of coal enough to keep a blazing fire going for an hour or two. That, as a matter of fact, is just what the body does with its carbon--uses it for fuel. And the energy derived from the carbon or coal does for the human body just what it does for the steam engine--it keeps the body warm and gives it energy to move.

A full grown man should weigh one hundred and fifty pounds, which should be divided as follows: muscles fat, eighteen pounds; skin, seven and their appendages, eighty-one pounds; bones, twenty-two pounds; pounds; brain, three pounds; internal organs, twelve pounds; blood, seven pounds. The body contains about seven-eighths water; and so the man would contain about seventeen gallons, or more than half a barrel of it.

NORMAL FOOD CONSUMPTION.

As to food, he would consume every day five thousand grains of lean meat, eight thousand grains of bread seven thousand grains of milk, three thousand grains of potatoes, six hundred grains of butter, thirty-three thousand grains of water. This makes a total of food and drink equal nearly to eight pounds.

The matter thus taken into the body is normally balanced by an equal quantity of waste thrown off. For the escape of this waste there are four avenues: the lungs, which throw off twenty thousand grains daily; the skin, which excretes ten thousand grains; and the kidneys and intestines which eliminate twenty-four thousand and twenty-six hundred grains respectively. Of the water taken, the lungs and skin together carry off just about one-half, the kidneys about forty-four per cent, and the intestines the rest. All this means, that there passes through the body within the course of a year almost a ton and a half of solid and liquid matter.

A CONSTANT REBUILDING.

The body rebuilds itself with a portion of this each day, discarding a corresponding quantity of waste. Thus we see that the body is constantly changing--constantly breaking down and at the same time being rebuilt. We speak of "my body" as if we had today the same body as we have always had. As a matter of fact, however, we build an entirely new body every few months. It is like a cataract. We see today the same Niagara Falls that men looked at five thousand years ago; but the water that forms the falls is always changing--is never the same for one second. So with the body.

The human body is a prodigious worker, the most compact and powerful engine known. In a single day the body of a healthy man does work

equal to lifting a weight of thirty-six hundred tons one foot from the ground. A man at hard labor, a longshoreman, for instance, helping to load a ship, will do a work of two hundred to two hundred and fifty foot-tons a day. So it will be understood that the body in its general activity does the work of fourteen or fifteen men. This is many times what any man-made engine can do.

MARVELS OF THE HEART.

In order to make this more clear, let us for a moment glance at the work of the heart. The heart is merely a hollow muscle, consisting of two pumps, one of which sends blood to the lungs, the other pumping blood through the tissues. Each side of the heart hold two ounces of blood; and as the heart contracts about seventy-five times a minute this means that one hundred and fifty ounces, or about one and one-sixth gallons, of blood passes through each side of the heart every minute. That is, about seventy gallons every hour, sixteen hundred and eighty gallons every day, six hundred and three thousand gallons in a year, is pumped by each of the ventricles, making the total work of the heart for the year one million, two hundred and six thousand gallons. Think of the work done by the heart in ten years, in twenty, or in a lifetime! And the heart weighs about half a pound.

RUNS LIKE A MILL RACE.

The stream of blood leaving the heart travels six hundred and twenty-one feet a minute, seven miles an hour, one hundred and sixty-eight miles a day, sixty-one thousand miles a year. No man probably has ever traveled so far as his own blood has. For the blood to make the entire double circuit from heart to lungs, then back to the heart, thence to the tissues, and finally back to the heart again, requires in the adult about twenty-three seconds. In the smaller body of the child the circuit is made much more rapidly, and the heart beats correspondingly faster. For instance, at birth the heart beats at about one hundred and thirty-six to the minute, and the blood stream makes its entire figure eight circuit in about twelve seconds. At three years old the heart rate is one hundred and eight, and the blood stream makes its journey in about fifteen seconds; at five the pulse is eighty-eight, and the blood circuit requires eighteen seconds.

THE RIVER OF LIFE.

The blood is the great river of life, a stupendous waterway, the most populous that can be imagined, teeming with traffic. Laborers, soldiers, carriers, countless millions of millions of busy workers, crowd it coming and going, each with his special duty to attend to. In a cubic inch of blood there are twelve thousand and millions of one class of these tiny laborers. There are nearly two gallons of blood in the human body, and a gallon contains two hundred and thirty-one cubic inches. So, by multiplying twelve thousand millions by two hundred and thirty-one, we shall get approximately the number of the erythrocytes, the red oxygen-carbon dioxide carriers, in the blood. If these little carriers could be spread in a layer, they would cover a surface of twenty-eight thousand square feet.

The red carriers are not the only workers embarked in the great, inter-somatic waterway, the blood stream. There are others less numerous, more intelligent, more adaptable, more versatile. Their duties are various and important; in fact, they are the real feeders, the faithful guardians, and the efficient repairers of the body.

WHAT THE LUNGS DO.

Nothing is more interesting than the body's methods of economy. For instance, in its work of taking in oxygen and throwing off carbon dioxide, it needs space, surface. And so there has been evolved a method by which in the lungs, the inhaled air reaches a surface of sixteen hundred square feet. The peculiar little openings, or vesicles, by which this economy of space is gained are six hundred millions in number. There passes into and out of the lungs in one day no less than four hundred cubic inches, about half a barrel of air. The lungs exhale every day an amount of carbon that if caught and solidified would about equal a lump of coal weighing half a pound.

The air breathed out is moving at a speed of forty-three inches a second, and is inhaled at a speed of fifty-two inches a second. In a sudden intake of breath, as in a sob or gasp of surprise, the speed of inhalation may be much greater--ten or even twenty feet a second.

The external surface of the body

has an area of about twenty square feet and contains seven million minute openings, perspiratory glands, out through which the blood pushes certain of its poisonous ingredients.

The skin has a respiratory as well as a perspiratory function. Through a healthy skin we take in about one-sixth as much oxygen as through the lungs.

THE DOCTOR AWAY FROM HOME WHEN MOST NEEDED.

People are often very much disappointed to find that their family physician is away from home when they most need his services. Diseases like cramp colic and cholera morbus require prompt treatment, and have in many instances proven fatal before medicine could be procured or a physician summoned. The right way is to keep at hand a bottle of Chamberlain's Colic, Cholera and Diarrhoea Remedy. No physician can prescribe a better medicine for these diseases. By having it in the house you escape much pain and suffering and all risk. Buy it now; it may save life. For sale by all dealers.

BATTLESHIPS ARRIVE.

Advance British Fleet in Quebec Harbor.

QUEBEC, July 15.--The advance British fleet for the temporary celebration swung majestically into the harbor at 7 o'clock last evening, and cast anchor in the river below the Citadel. There were five ships in the fleet, the battleships Exmouth, Albermarle, Russell and Duncan, and the cruiser Arrogant. The cruiser Venus did not come with the rest of the fleet, being still down the river, but will arrive later. There were large crowds of people along the waterfront to view the arrival of the ships, the bands of which played as they proceeded up the harbor. "The Maple Leaf Forever," being prominent among the musical selections.

HAVE YOU A HORSE?

If you want to keep him in shape, never let him suffer pain. Rub on "Nerviline" it is noted for curing strains, swellings and stiffness and sore muscles. For internal use in curing cramps and colic, Nerviline is a perfect marvel. In every good training stable you'll find Nerviline, because it keeps horses in trim and reduces the veterinary bill. Farmers, stockmen and all horse owners should buy Nerviline and prove how powerful it is. Good for man or beast. 25c for bottle at all dealers.

Weddings and Broken Teeth.

"After every big east side wedding the dentists of the quarter reap a harvest," said a dental surgeon. "It is the broken teeth that keep us busy. I do not mean that the guests raise a row and knock out one another's teeth. Oh, no; it's the wedding cake that does the mischief. Over here bakers mix into wedding cakes every kind of a charm from coins and tiny china dolls to plain tin tags. In the course of the festivities many a luckless guest is bound to crack a tooth on that indigestible part of the wedding feast. At various times the wedding cake victims have talked of getting up a petition imploring the bakers to omit all gritty ingredients, but up to date the snapping of teeth goes merrily on."

Public Day.

"Public day" is a term applied in southern Delaware and on the Eastern Shore of Maryland to those days when by concerted agreement, the result of old tradition, country folks come to town to "do their trading."

BEST MEDICINE IN THE WORLD FOR COLIC AND DIARRHOEA.

"I find Chamberlain's Colic, Cholera and Diarrhoea Remedy to be the best remedy in the world," says Mr. C. L. Carter of Skirum, Ala. "I am subject to colic and diarrhoea. Last spring it seemed as though I would die and I think I would if I hadn't taken Chamberlain's Colic, Cholera and Diarrhoea Remedy. I haven't been troubled with it since until this week, when I had a very severe attack and took half a bottle of the twenty-five cent size Chamberlain's Colic, Cholera and Diarrhoea Remedy, and this morning I feel like a new man." For sale by all dealers.

TO PUT AN END TO LEAKS



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A HAPPY SOLUTION.

The Way the Family Compromised on a Vexed Problem.

There had been a long standing difference of opinion in the Plunkett family concerning the dining table. Mrs. Plunkett maintained that its legs were too short and ought to be lengthened at least half an inch.

"It doesn't fit our chairs, Jared, and you know it," she contended. "When we sit down to this table we're too high above it. You could have pieces of wood glued on the ends of the legs. That would be easier than to saw off the ends of all the chair legs."

"I don't agree to your proposition at all, Cordelia," said Mr. Plunkett. "I think the table is just right. But I'm willing to compromise the matter. You have been wanting a hardwood floor in this dining room for a long time, haven't you?"

"Yes."

"Well, we can have that new kind of hardwood flooring that is laid on top of the old floor. That will raise the entire surface three-eighths of an inch or more, and that will raise the table, of course, just so much. How will that do?"

This seemed to be a fair proposition, and without a moment's hesitation Mrs. Plunkett accepted it as a satisfactory compromise.--Youth's Companion.

It Was In His Head.

Balzac once promised Lireux, the manager of the Odeon theater in Paris, a five act drama, "The Springs of Quinola." He was so busy with other work, however, that not till he had been long and urgently importuned did he promise to read his piece to the company the next week. The company gathered about him on the day appointed, and he read his five act play fluently through to the end. Lireux was enthusiastic, ran up to shake hands with the great writer and turned over the pages of the manuscript, whose contents had pleased him mightily. But what was this? There were only four acts. The last pages of the manuscript were blank. In surprise the manager asked what it all meant. Balzac smiled and admitted that he had not yet written out the fifth act, but declared that he had it as clearly in his head as if it already stood on paper. "And," continued the poet merrily, "I have in the same head two more outcomes of the plot in case the one I just read doesn't please you."

HAVE YOU UGLY WARTS?

Cure them with Putnam's Painless Corn and Wart Extractor. Fifty years success is a guarantee of its merit. Beware of substitutes.

Tin Money.

Tin money was once used in England probably on account of the rich tin mines of Cornwall. Early English coinages contained much of this tin money, principally in the form of farthings and halfpence.

Stirrups.

Stirrups were unknown to the ancients. They were first used in the fifth century of our era, but were not in common use even in the twelfth century.

Alum.

Alum should never be absent from any household. It has a very good effect if applied to bleeding wounds, as it checks the loss of blood. Boiled in milk in small quantities it is good for toothache. It must be held in the mouth, not swallowed. For bleeding of the mouth or tongue a wash in cold water in which alum has been dissolved is very effective.

Wormy Apples.

If housewives who dislike to find worms when cutting apples would first put the fruit in cold water they would find that the worms would leave the apples and come to the surface of the water.

HAVE A GOOD COMPLEXION.

First of all you need plenty of blood--the red kind. Have it pure, or otherwise blotches and pimples will render your natural charms unavailing. Nothing can equal Ferrozone, either as a former of rich blood or as a skin purifier. By driving out humors, Ferrozone cleanses inside just as water does outside. Because of the nourishment and building properties it contains, Ferrozone brings the system to a point of vigor, from which shines vim, ambition, good spirits. For good health, good looks, good health, take Ferrozone, all dealers in 50c boxes.

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