

YOU HAVE SIX EARS.

THE ORGANS OF HEARING ARE A WONDERFUL SET OF MACHINES.

They include Two Hammers, Two Anvils, Two Stirrups, Six Canals, Two Small Shells, Six Drums and Several Other Curious Utensils.

The hearing apparatus is far more wonderful than most people have the slightest idea of. It is a marvelous collection of instruments for receiving, magnifying and recording sounds or vibrations, as the learned term them.

What you do when you speak to a friend is to throw the air into vibration. Your vocal organs strike the air, and the impulses thus caused reach the trumpet shaped bits of flesh and gristle you call ears. You have altogether six ears.

The flaps which are stuck on to each side of the head are the outer ears. Besides these there are the middle ears and the inner ears, all of which lie in cavities in the bones of the head. All that the flaps do is to collect and concentrate the vibrating currents of air, so that they may strike the ear drums.

These latter are really the middle ears. The outer ear narrows as it enters the head and ends in a ring. A membrane is stretched over this ring, much in the same way as a piece of parchment is stretched over the head of a drum.

The ear drum is a true drum, for it can be tightened and slackened by means of levers made for that purpose. The tightening and slackening are done quite automatically to suit the various sounds.

This is how it is tightened: In the middle ear are four tiny bones, the most peculiar looking bones imaginable. The biggest is a little odd shaped bone called the mallet. It looks like a lilliputian version of a lobster's claw. Minute muscles are attached to it, so that it may act as a lever to increase or diminish the tension of the drum skin. One muscle relaxes the membrane, another pulls it taut.

The four bones form a chain to connect the drum skin of the outer ear with the drum skin of the inner and so to conduct the sound. The next bone to the mallet is the anvil, then come the spherical bone and the stirrup, which looks exactly like its namesake, but it is by far the most important of the four. By means of this alone one can hear, in a fashion, even if all the others be gone.

A bony, gristly tube joins the ear drum with the back of the mouth at the side of the soft palate. Hence the four bones are always in a bath of air, quite naked, as it were, it is owing to this that people who are somewhat deaf are able to hear better when they listen with their mouths open.

Now we come to the inner ear, which is made up of three parts. The first one is called the vestibule, or hall, and it has a drumhead to which the chain of little bones is attached.

The hall leads to the other parts, both of which consist of tortuous tubes along which the sound passes. One part is made of three semicircular canals. The other is shaped exactly as a snail's shell. All these make up a peculiar labyrinth, and all are completely filled with a curious fluid. Their walls are lined with the soft, pulpy nerves of hearing which communicate with the brain. Owing to these complex and winding cavities, a great extent of nerves is exposed for the reception of sound.

Now let us see what happens when somebody says "Hear!" to you. The air is thrown into vibrations, which spread out and out until they touch the side of your head. There the fleshy flap on one side collects and magnifies the vibrations.

Down the ear funnel they pass until they reach the membrane of the drum of the ear. They strike on the membrane, which adapts itself to them. Then the vibrations are communicated, through the bones in the middle ear, to the membrane covering the entrance to the labyrinth.

If you keep your mouth wide open the air vibrations pass direct to the little bones. The impulses of the air are not interrupted by first having to strike the membrane of the drum; that is all the difference.

People could easily converse with their ears sealed up. If the two speakers each held an end of the same piece of hard wood against their teeth even the faintest whisper could be understood.

You will see from this that what are commonly called the ears are not essentially necessary to hearing, after all.

Well, however the vibrations are received, they finally strike against the membrane covering the entrance to the hall of the labyrinth. Thence they make the fluid which fills the labyrinth vibrate. These vibrations act on the fibers of the auditory nerve, the fibers which coat the inner ear. Along this nerve the impressions are communicated to the brain. In this manner the sensation of sound is produced, and you know that somebody said "Hear!" to you.

The Tepid Bath.
A tepid bath at about 90 degrees Fahrenheit, taken just before retiring, in a tub where the whole body except the face is immersed, is an excellent substitute for sleep, says Henry Bennett Weinberg in Perfect Health. To be exact, he says it is the only substitute known to science for nature's sweet restorer. "I have known cases of prolonged and chronic insomnia to be cured by this form of bath. Sleep, with the exception of the heart beats, is intended for perfect rest. The bath above named will come near enough producing this result to answer many a means for sleep in cases of insomnia."

Cruel.
His Wife—Charles, I do think you ought to give me more of your time. Her Husband—Give you more! Why, you take so much of my time that I couldn't be a second in a duel.—Harper's Bazar.

It Has Been Done.
"Still, of course," said the tobacco-enthusiast to the wooden Indian. "It is possible sometimes to make a good round sum out of a perfectly square deal."—Syracuse Herald.

God never imposes a duty without giving the time to do it.—Ruskin.

FASHION IN SPEECH.

Some Words Go Out of Favor and Win Their Way Back.

The history of the race is written in the words it uses. As we grow and change, so our language grows and changes. Mr. Leon Mend in his book "Word Cottage" points out that some words go out of fashion and come back, like tan shoes and wide rimmed hats, although the change in words is much slower than the change in dress.

In Spenser's day "forestall," "fain," "scathe," "askance," "embellish" and "dapper" were not considered good, but they have since gained respectability and won their place in the language. The seventeenth century regarded as obsolete a number of Chaucer's words—"transcend," "bland," "sphere," "blithe," "franchise," "carve," "anthem." One by one these words came to life again and walk the pages of our literature in full vitality. Other words now indispensable which the seventeenth century rejected are "plumage," "tapestry," "tissue," "ledge," "trenchant," "resource," "villainy," "thrill," "yelp," "dovetail."

Bacon did not have the good word "encyclopedia," but used the heavy equivalent, "circle learning."

Fulke, the sixteenth century author who wrote "A Defense of the Sincere and True Translations of the Holy Scriptures into the English Tongue," did not admit "neophyte," "homicide," "scandal," "destruction," "tunic," "despicable," "rational." Another book published in 1658 puts the stamp of censure on "oblique," "radiant," "adoption," "caress," "amphibious," "horizontal," "concede," "articulate," "destination," "compensate," "complicated" and "adventitious."

It is hard to trace the history of a fashion in words. Seldom do we have the precise record that Chesterfield furnishes us in a letter in which he says that he was present at the birth of the word "flirtation" on the lips of a beautiful woman. Even with that record we cannot tell why "flirtation" remained in the language and was not dropped like hundreds of other new coinages.

QUEER SUPERSTITIONS.

The following are some curious superstitions that are still extant among English speaking people:

If you kill frogs your cows will "go dry."

Tickling a baby will cause the child to stammer.

To thank a person for combing your hair will bring bad luck.

To kill a ghost it must be shot with a bullet made of a silver coin.

To dream of unbroken eggs signifies trouble to come; if the eggs are broken the trouble is past.

If you boast of your good health strike wood immediately with your fist or you will become ill.

To dream of a live snake means enemies at large, of a dead snake enemies dead or powerless.

To allow a child to look into a mirror before it is a month old will cause it to have trouble in teething.

A child will have a nature and disposition similar to those of the person who first takes it out of doors.—Philadelphia Inquirer.

Johnson's First Tailoring Job.
President Andrew Johnson had never been ashamed of his humble origin; had, indeed, often narrated the unhappy story of his first job at tailoring. He had been summoned, he would say, to the residence of an influential citizen and had been bidden to make over one of the citizen's old coats for the son of the house.

Johnson, a little nervous through excess of zeal, took off his coat, turned back his sleeves, measured the youth and set to work. He was getting along well—the job, indeed, was nearly finished—when dinner time came and he reached out for his coat in order to put it on and go home.

To his chagrin he discovered then that it was his own coat which he had cut up for the boy.

Swearing to Excess.
A cricket club in the south of Scotland, which has evidently found that the use of lurid language doesn't add to the amenities of play, has passed the following bylaw:

"Any member swearing to excess may be expelled."

I have not heard whether the club committee has yet arrived at a definition of "moderate swearing." The attempt to find one to meet all cases is likely to result in language both "painful and free."—Glasgow Times.

Curiosity Conquered.
"I thought Jane had such a dreadful stiff neck."

"She has."

"Nonsense. There was a man painting the steeple of the brick church and she watched him for half an hour."—Cleveland Plain Dealer.

Just Vanity.
Papa—Dear me, Mary, whatever are you going to do with these trunks? Two, four, six, twelve of them! You can't fill more than one.

Mamma—I know it, my dear; but we must make a decent appearance on arriving at the hotel.

Cruel.
His Wife—Charles, I do think you ought to give me more of your time.

Her Husband—Give you more! Why, you take so much of my time that I couldn't be a second in a duel.—Harper's Bazar.

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A STORY OF WHISTLER.

The Picture That Was His Even Though It Had Been Sold.

A certain Lady So-and-so, who admired Whistler's genius to the extent of purchasing one of his pictures, never was able to obtain possession of her property. One day she drove to the studio in her victoria. Mr. Whistler went out to the sidewalk to greet her.

"Mr. Whistler," she said, "two years ago I bought one of your pictures, a beautiful thing, and I have never been able to hang it on my walls. It has been loaned to one exhibition or another. Now today I have my carriage with me, and I would like to take it home with me. I am told it is in your possession."

"Dear lady," returned Whistler, "you ask the impossible. I will send it to you when I have it again, but it is not here. You have been misinformed." And so forth, and so forth, to the same effect, and the lady drove off without her picture.

After she had departed Whistler commenced to poke around the studio, and to the great astonishment of a friend who had been an involuntary listener to the above conversation, he brought forth a canvas.

"Here it is," he said. "She was right about one thing—it is beautiful." And it was beautiful.

"But the impudence of these people," he continued, "who think that because they pay a few paltry hundred pounds they own my pictures. Why, it merely secures them the privilege of having them in their houses now and then! The pictures are mine!"—Harper's Weekly.

Wetted Music of More.

More music is strangely unorthodox to European ears, says a writer in Everybody's Magazine. It consists mainly of a monotonous reiteration of sound, even a supposed change of air being almost imperceptible to an ear unaccustomed to the barbarous lack of tone. The More piano is a wooden frame shaped like the runners of a child's sled, on which small kettle-drums are balanced by means of cords and sticks laid horizontally. These rather resemble pots for the kitchen range than musical instruments, but each is roughly tuned, forming the eight notes of the scale. Women crouching on the ground before this instrument beat out a wailing sound from it with shaped sticks, while from larger kettle-drums, hung by ropes from a wooden railing at one side, two men accompanied the piano, and one old woman in the background drummed out an independent air of her own on an empty tin pan.

The Munka Bride.

Here is a picturesque incident in the Munka wedding ceremony in India: The bride goes to a stream or well near by with her pitcher and, having filled it, raises it aloft on her head, sending it with her hand. The bridegroom comes behind, as she turns homeward, and, resting his hand on her shoulder, shoots an arrow along the path in front of her through the loophole formed by her uplifted arm. The bride then walks on to where the arrow lies and picks it up with her foot, still balancing the pitcher on her head. Transferring it gracefully to her hand, she restores it to the bridegroom, thus showing that she can perform her domestic duties well, with hand and foot at his service. He in turn, by shooting the arrow in front of her, has shown his ability to protect her and clear her path of any danger that may beset it.

Cost of False Noses.

People sometimes lose their noses by disease or by accidents, and some have lost them in war. For noseless persons the most appropriate organs are said to be made of wax, and the best ones cost about \$175, though a really good one can be got for \$75. A nose made of paper mache may be bought for \$5. Noses made of this material are enamored and are deceptive, and for a poor man they are said to answer all the purposes that are required. Waxen and paper noses are, in case of disease, preferable to those made by the planting of flesh on the diseased part, for several cases have been known where the transplanting of the flesh of the nose has endangered men's lives.—London Tit-Bits.

Frankfort Death Houses.

In Frankfort the body of the dead is removed as soon as life is extinct to "kitchen houses" or death houses, where it rests until the first signs of decomposition appear. Such a death house consists of a warden's room, with five death chambers on each hand. A ring on the finger of each body is connected with a bell, and should one rouse from a trance that had been mistaken for death be conscious of the warden. Since Frankfort has had death houses several young girls have been rescued from being buried alive. Munich has a similar system.

Fight Until the End.

Life can be made a success. It is not a question of climbing above poverty; it is a question of understanding life. So many of us have been lured away and fascinated by what turn out to be phantoms and false gods! We have had to wheel back and begin over again and fight along against tremendous odds, and yet with all that life can be made a success, for success consists in doing right, in doing the best you can with what you have, of years of experience, of sorrows, of chances, of joys and of hope. Fight until the end.—Schoolmaster.

Brave and Brainy.

"The man I marry must be both brave and brainy."

"When we were out sailing and up set I saved you from a watery grave."

"That was brave, I admit, but it was not brainy."

"Yes, it was. I upset the boat on purpose."—La Vie Parisienne.

An Excess of Nerve.

"I like to see a young man energetic and able to push himself," said the old banker sadly. "But when he borrowed the money from me to buy an automobile in which to elope with my daughter it was carrying things a little too far."

Her Superstition.

"Are you superstitious?"

"Not in the least," answered Miss Giggins. "I used to be, but do you know, I found that whenever I got to believing in signs I had had luck."—Exchange.

A MAN OF MYSTERY.

Eccentric Life of Metastasio, the Celebrated Italian Poet.

Metastasio (1698-1782), the celebrated dramatic and operatic poet, spent fifty-five years in Vienna with the Martines family without ever learning German or wishing to learn it.

Besides his utter indifference to all speech but Italian, Metastasio possessed many peculiarities of character. None might mention death in his presence. Those who alluded to smallpox before him he made it a point not to see again. In all his fifty-five years in Vienna he never gave away more than the equivalent of \$25 to the poor. He always accepted the same seat at church, but never paid for it. He took all his meals in the most mysterious privacy; his greatest friends had never seen him eat anything but a biscuit with some lemonade. Nothing would induce him to dine away from home. He never changed his wig or the cut or color of his coat.

Metastasio was to have been presented to the pope the day he died and raved about the intended interview in the delirium of his last moments. Mrs. Plozzi (familiar to readers of Boswell's "Life of Dr. Johnson" as Mrs. Thrale) collected these particulars from the ladies of the Martines family, with whom Metastasio was so long domesticated without speaking or understanding a word of their language from first to last.

The Moon and Rain.

"When you see the new moon hangin' straight up and down, lookin' sort of sour like, you're not goin' to have rain for at least two-thirds of the month," said an old observer. "When she comes up lookin' like she wouldn't spill, then it's goin' to be good weather for two-thirds of the month."

"You can bank on that, boy. I've been watchin' the moon for weather more'n thirty years on land and sea, and the dip tells the story better than any weather prophet that ever called turns on the weather from headquarters down in Washington."

"Further than gettin' a cue on the weather," he continued, "you can tell by the color of the moon whether it's goin' to be a warm or cold rain."

"If the 'wet moon' looks red it's goin' to be a warm rain. If it looks bright and silvery like it's goin' to be a chilly rain."

"I've been watchin' Luna, as they call her, come up over Jersey for a number of years, and I haven't found her sign to fail yet."—Philadelphia Inquirer.

Head Massage Saves Hair.

"The hairbrush is responsible for much of the baldness that we see," a barber said. "It irritates the scalp. It destroys the little, delicate, tender follicles of hair that are trying their best to get on in the world."

"What would you substitute for the hairbrush—the comb?" a man asked.

"By no means. I'd substitute rubbing with the hands—massage. A little massage morning and evening, with a shampoo once a week, would keep the hair in excellent condition. It would encourage new hair to grow, whereas the vigorous brushing that is so common scares and kills all the feeble new hairs as soon as they sprout out. The brush and comb should only be used to part and arrange the hair—for about half a minute, that is, daily."

Sarah's Gloves.

A family in the south had a coal black cook named Sarah, whose husband was suddenly killed in a quarry accident. For the time being her grief was allayed by the preparations for an elaborate funeral, and on the day of this event, so dear to negroes who desire to show their importance, she appeared before her mistress in deepest black, but on her hands were a pair of white gloves, such as soldiers wear at dress parade and guard mount.

"Why, aunty," exclaimed her mistress, "what made you get white gloves?"

Sarah drew herself up indignantly and said in the chilliest tones, "Don't you suppose I wants dem niggas to see dat I've got on gloves?"—Lippincott's.

A Busy Day.

"Ebenzer, dear," cried the wife of the kindly old capitalist as he slouched heavily homeward in the dusk, with his tall worn hands begrimed with gold dust and his back bowed by heavy and laborious calculation, "hurry now and water the stock and then come in, dear, and we'll sit down cozily and cut coupons."

"And glad I will be to rest," sighed he. "I've been shearing lambs all day. Dum this life! Dodgad it anyway! I got half a notion to sell out and move away, I'm that tired out."

His Private Zoo.

Smith—Come and go with me to the Zoo.

Jones—No, thank you. I'll stay at home. My oldest daughter does the kangaroo walk, my second daughter talks like a parrot, my son laughs like a hyena, my wife watches me like a hawk, my cook is as cross as a bear and my mother-in-law says I'm an old gorilla. When I go anywhere I want a change.—Wasp.

Not Less Devoted.

You used to sing 'Every Morn I Send You Violets' before we were married," said Mrs. Brimkin with a sigh.

"Yes," answered Mr. Brimkin, "but my devotion has taken a more practical form. Every month I pay the meat bill."—Washington Star.

Consoling.

He—Darling, I have lost my position. She—Never mind, dear. Think how small your salary was.—Town and Country.

TELLING TREES' AGES.

Only Accurate Way Is Said to Be by Girth Measurement.

"The only accurate way to estimate a tree's age is by the measurement of its girth," said a botanist. "The counting of the rings of exogenous trees can only be applied to such as are cut down in their prime, for these trees, when they begin to die, cease to add their yearly rings. Girth measurement is the only safe guide to the age of trees."

"Hence all over the world botanists have now for some years been measuring trees of known and unknown age, compiling thus a volume of statistics that will become more and more valuable as it increases in size."

"The yew is the longest lived of trees. Three feet a century, our statistics show, is its normal growth. According to this rule, the Fortingal yew of Scotland, which was fifty-six feet in girth in 1769, must have lived over 1,800 years. The Tisbury yew, in Dorsetshire, is thirty-seven feet in girth and should be, therefore, 1,200 years old."

"There is a table of the age of oaks that differs from this. It is not a very satisfactory table, but it was compiled from trees of known age, and therefore it is statistically very valuable. According to it, a 40-year-old oak had a circumference of 8 feet; 83 years, 12 feet; 100 years, 18 feet; 200 years, 20 feet; 250 years, 27 feet; 300 years, 33 feet."—Philadelphia Record.

Curly Shavings.

A shaving of wood curls up owing to contraction on one side and expansion on the other. This expansion is accelerated by what is known as the "back iron" or "cap iron" which is used in most planes.

The object of this "cap iron" is to break the shavings into short lengths and to prevent the "cutting iron" from tearing or splitting the fibers of the wood, which lie always more or less in a slanting direction.

The nearer the edge of the "back iron" is placed to the edge of the "cutting iron" the shorter the shavings are broken off. These are smooth on one side, and the serrations on the other correspond with the distance between the edges of the two irons.

All wood, too, is formed in circular rings, such as can be seen in the section of any tree trunk. It follows, therefore, that when the rings of wood are cut across, as they are to a certain extent in the act of planing, they are relieved from tension, and curl up in the endeavor to expand themselves.

All Timekeepers Are Inaccurate.

The capacity of a watch for keeping good time is very much governed by its construction and its more or less perfect finish. It cannot be expected of the best horizontal watch that it should always keep good time and even less so of the inferior make of machine made watches. The changes of oil, the variation in temperature, the diversity of humidity of atmosphere, all greatly affect the going of a watch. Indeed, it is only the most perfect finish which neutralizes the adverse influences to the greatest degree. As a matter of fact, no watch keeps perfectly correct time, and even the best chronometers used in observatories and on board ships must be regulated according to tables which are kept to fix the variations to which all watches are liable.

A Bad Habit.

"Sixty-eight," murmured a young librarian as a woman waiting for a book leaned forward and touched her cheeks and lips to the top of the brass guard about the desk.

"Beg pardon," said the woman. "Did you speak to me?"

"Oh, no; I'm just counting the persons whose lips have touched that rail this afternoon. You are the sixty-eighth."

The woman started back in disgust and hastily wiped her lips on her handkerchief.

"I was unconscious of what I was doing," she exclaimed.

"I suppose they all are," was the laconic reply.—Youth's Companion.

English Estimate of Emerson.

A single short work of Emerson's, the essay on "Compensation," is enough to convince one that this was a man of true genius. We have never read anything in Thoreau approaching that and other works of Emerson in originality or beauty. But Emerson is the best of the American writers. Was it Henry James who called him "the unfallen man?" One cannot imagine an intellect which failed to admire "Compensation" or which was convinced by its transcendentalism.—London Saturday Review.

Basely Deceived.

"Did you believe him when he said he loved you?"

"No, I didn't."

"Did you believe him when he told of his great wealth?"

"No."

"Then there's no harm done."

"Yes, there is. I was gone enough to believe that the ring he gave me was a real diamond."—Cleveland Plain Dealer.

Noise and Work.

"You can't judge a man by de'mount of noise he makes," said Uncle Eben. "De locomotive engineer is doin' his best work when he's ringin' de bell an' blowin' de whistle."—Washington Star.

Tommy's Congratulations.

Reggie—Tommy, do you know I'm going to marry your sister?

Tommy—Then I think I'll go and congratulate mother.

Put On.

"She has such a natural charm about her."

"Yes, but it is artificial."—Judge.

KNOCKOUT BLOWS.

There Are Many Vulnerable Points in Man's Anatomy.

An impression prevails that there is only one blow—that on the point of the jaw—which really constitutes the knockout blow, says a writer in the British Medical Journal. This is an error. The couple is a very vulnerable part of the head, the lesion usually produced being laceration of the brain substance, with hemorrhage. A blow on the ear may cause rupture in the membrana tympani and collapse. Dangerous points are over the carotid and on the larynx, the danger lying in the concussion conveyed through the large nerve trunks which run down the neck.

A blow on the larynx with the bare fist may cause instant death, as may one on the chest well over the heart. Diaphragmatic blows are not so dangerous to life, the shock being temporary. Brisk rubbing and the use of stimulants is the most satisfactory mode of treatment. Blows over the kidneys may cause rupture and hemorrhage, with intense pain and shock. The most dangerous and infinitely painful form of knockout blow is that on the "mark," an area of the abdominal wall corresponding to the center of a triangle formed by the xiphosternal articulation above and a line joining the bony ends of the seventh ribs below. Behind this lies the pyloric end of the stomach. A blow here constitutes the "solar plexus" blow, but in reality it is the stomach which receives and transmits the shock.

Attainment of Wealth Not Probable.

Whatever the tendencies of wealthy Americans of the present day, it is extremely improbable that an aristocracy of wealth should ever come into being.

It has been seen that an aristocracy depends chiefly upon two conditions—the continued possession and exercise of power and the consequent unity of aims and ideals.

The aristocratic body in England, for instance, is self-conscious; its members are united by mutual understanding. They acknowledge certain well recognized laws of life and manners. They depend upon each other to uphold these laws. Individually, wealthy Americans may be both self-conscious and self-assertive, but collectively they are antagonistic to one another. The accumulation of wealth implies struggle, and struggle does not bring forth the kind of qualities which make of the gentle and stately men and women of Vandyke's canvases one great family.

—Anna McClure Sholl in Gunton's Magazine.

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