**The voice, in speech and song : a view of the human voice for speakers and singers and all who love the arts of speech and song / by Theodore E. Schmauk.**

# THE VOICE,

IN

# SPEECH AND SONG.

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A View of the Human Voice for Speakers and Singers and all Who Love the Arts of Speech and Song.

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BY

THEODORE E. SCHMAUK.

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LET thy voice rise like a fountain.

—TENNYSON.

O, HOW wonderful is the human voice!
It is indeed the organ of the soul!

—LONGFELLOW.

MAN possesses in the organs of utterance—though he seldom thinks of it, or forgets the blessing because it is given—a musical instrument which is at once a harp, an organ, and a flute; an instrument on which Nature gives him the mastery of a finished performer. *How* its notes are struck, so as to express in coördination the many-colored world without and the shadow-world within, is the mystery of language.

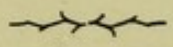
—ALFRED H. WELSH.

THEN we talked—oh, how we talked! That voice so
cadenced in the talking,
Made another singing—of the soul! a music without bars—

—E. B. BROWNING.

MY tongue's use is to me no more
Than an unstringed viol or a harp,
Or like a cunning instrument cased up,
Or, being open, put into his hands
That knows no touch to tune the harmony.

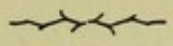
—BOLINGBROKE.



THE Persian poet Saadi tells us that a person with a disagreeable voice was reading the Koran aloud, when a holy man, passing by, asked what was his monthly stipend. He answered, "Nothing at all." "But why then do you take so much trouble?" He replied, "I read for the sake of God." The other rejoined, "For God's sake, do not read; for if you read the Koran in this manner you will destroy the splendor of Islamism."—EMERSON.

MOSES said unto the Lord, "O my Lord, I am not eloquent. . . . I am slow of speech, and of a slow tongue.

"And the Lord said unto him, "Who hath made a man's mouth? or who maketh the dumb, or deaf, or the seeing, or the blind? have not I? now, therefore, go, and I will be with thy mouth."

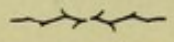


IT comes, if it come at all,
Like the outbreaking of a fountain from the earth,
Or the bursting forth of volcanic fires, with spontaneous, original, native force.

THE graces taught in the schools, the costly ornaments and studied contrivances of speech, shock and disgust men, when their own lives, and the fate of their wives, their children, and their country hang on the decision of the hour.

—WEBSTER.

YOU could have heard
The beating of your pulses, while he spoke.
—CROLY.



AND his voice was like a noise of many waters.
– EZEKIEL.

OH, there is something in that voice that reaches
The innermost recesses of my spirit!

HOW a voice of dignity and elegance will attract to purity and truth, to virtue and religion!

THAT silver voice
Is the rich music of a summer bird,
Heard in the still night, with its passionate cadence.

TO THE VOICE

THAT EVER THRILLS MY SOUL

# THE VOICE.

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# THE VOICE,

IN

# SPEECH AND SONG.

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THERE is not a sound in Nature to draw man's ear more quickly and hold it more undividedly than that of a perfect human voice. "The human voice," says Richard Wagner, "is the oldest, the most genuine, and the most beautiful organ of music." But its chief charm is not beauty of musical tone. It is something deeper. The voice is the personal, vital and only organ of the soul. Its sounds are living human pulses. They are the incarnation of spirit. They bring the inner states of the self to manifestation. Clothing the spirit with a lovely but fleeting form, they make possible its external and earthly

An Instrument of Music.

birth. They show my spirit to another, that he may behold, and know me. The very mission of this living instrument, which is a part of ourselves, is revelation of that which is within us.

Such revelation is interesting beyond anything else to those about us who are like us. The magic mirror of the otherwise inexpressible inmost spirit in its intellectual, sympathetic and volitional phases, subtly colored with the finer personal distinctiveness of our own individual manhood or womanhood, is irresistably attractive. Love sees her sweet or shy self in the tender tones. Hopes gild the tones with sunny brightness. Fear feels her own trembling shadow in them. Joys leap out in them and make them ring with gladness. The mind and heart, and every phase of all the man, are physically fixed and focused in this instrument. The voice is the only musical instrument that is played on directly by the spiritual personality. No hands touch its keys or modulate its chords. Yet the voice is not a spiritual thing.

Revealing Soul.

Its sounds are the mathematical motion of attenuated invisible substance. In it spirit

materializes under the laws and forms of matter. That our voice's every tone is a material form under mathematical laws of motion is to be strikingly seen by singing against the powder-covered disc of an eidophone. On this disc, or thin India-rubber membrane, stretched over a ring which is inserted into a bent tube, the singing voice will itself draw remarkable pictures in the powder.

**Under Delicate Physical Laws.**

Every tone of the voice will resolve the powder into a geometrical figure, on which the vibrations of the voice are recorded by clear and regular lines. The form of the figure will differ according to the pitch, intensity and duration of the tone. For the peculiar vibrations of each tone cause similar vibration of parts of the membrane, and thus the powder is thrown off from these parts and collects on the lines of no vibration, called the nodal lines.

Chladni* had already discovered that sounds acting upon a sensitive plate, would cause sand to group its grains after certain geometrical figures, varying with the nature

*Natural philosopher and mathematician. He wrote his "Discoveries on the Theory of Sound" in 1787, and his "Treatise on Acoustics" in 1802.

of the sound. And Savart,* who wrote on the vibrations of bodies and the laws of their communication, thoroughly studied these nodal lines of vibrating membranes. But a more beautiful and picturesque discovery has just been made. Namely, that it is possible, after skillful practice, to cause the delicate combinations of the various vocal elements constituting a tone to register themselves in the forms of palms, trees, forests, flowers, insects, shell-like forms, and trumpet and twisted snake-like shapes. Thus the voice can transmute sound into sight. And that ethereal form of vanishing beauty called a tone can translate itself into a pictured permanency appreciable to the eye.

The first person to have come across this marvelous power in the human voice seems to have been a Welsh singer, named Mrs. Watts Hughes. She uses certain notes and combinations of notes to change the formations of the figures at will. By replacing the powder on the membrane with moist pigments and colored liquids, she can give color to her voice-pictures and render them permanent. Specimens of them were shown in London last Fall, at the "Arts and Crafts Exhibition," where they attracted much attention. Panes of glass decorated in this way are used in the lower part of

* French physician and savant, 1791–1841.

the windows in Mrs. Hughes' Home for Little Boys, at Islington.

For it is possible to decorate glass in this way. The glass is moved rapidly round on the tensioned membrane, having been previously spread over with a flake-white paste. On singing a low note, firm but not very loud, into the upper end of the tube, tiny globules of the paste are thrown up into the air by the vibration of the membrane induced by the sound, and fall back upon the center of the disk, making a little round heap, like the center of a daisy. "Mrs. Hughes then sings a note of a different character from the first, when from the round center of white paste will fly out, at unequal distances, little tentative star-like jets. Sometimes two or three abortive attempts will have been made, when suddenly a symmetrical row of petals will start out and create, with the center, a dainty daisy-like figure. The pansy form is produced somewhat in the same way as the daisy, but more water is put on the disk in proportion to the paste, and the note is sung differently. In singing the shell and trumpet figures, the paste is made with Prussian blue, madder lake, or other pigment whose weight and character suit it to the vibrations of the particular note to be sung."

Quite recently Mrs. Hughes was asked as to how she came to make her discovery of the possibility of sound pictures. She said: "They were the immediate result of a great deal of previous thought given to the study of vocal sounds. I should tell you that from my earliest childhood I have always been particularly sensitive to sound. At Dowlais,

in Glamorganshire, where I lived when a child, I had the roar of the great ironworks day and night in my ears, and I heard the music in the deep thunder of the steam hammers and engines. It was perhaps this which made me interested in, and sensitive to, every kind of sound, and this interest was intensified when, later on, my musical education was begun. I had long been trying to test, as it were, the strength of individual notes of my voice by various means. While trying to discover some means by which to register visibly the vibrations of the voice, and for testing its quality and tone, I saw one day with intense surprise that the grains of sand with which I experimented formed themselves into a geometrical figure not unlike those which Chladni discovered. In fact, the figures which I then produced were Chladni's figures discovered over again. I continued my investigations, and slowly and gradually discovered that by singing certain notes into the eidophone over the mouth of which the disk is placed, I can sing various substances, such as sand, lycopodium, or colored liquids, into certain figures.

"To show how she makes the pictures, Mrs. Hughes sat down before her eidophone, on which a small quantity of fine powder had been scattered, and sang a deep full note into the tube. Immediately there was a miniature storm upon the powder-covered disc. Tiny clouds of dust arose, and were driven hither and thither as if by hurricanes, and as the commotion gradually lessened the dust settled down into what was seen, when the last note had died away, to be a perfect geometrical figure.

To change it to another figure Mrs. Hughes sang another note into the tube, and the dust storm began all over again, to die down with a new form outlined upon the disc. The dust forms are, of course, destroyed by a breath, but when moist color is used instead they become permanent as the color dries. Long observation has made Mrs. Hughes familiar with the effect of each different note upon the material on the disc, and by this means she is able to make any form at will When a daisy is wanted, by one note she makes all the substance creep together into a solid mass in the centre. Then by another note she causes little petals to creep out on every side of this solid mass. If the first attempt is not perfect enough to suit her she uses another note, at the command of which all the particles of matter rush back again to the center, to come out into petals once more at the sound of a different note.

"The panes in the windows of her own room are decorated with the voice-pictures, some of them rarely beautiful. On one a shell, pearly grey and beautifully shaded, lies half hidden in a bed of dainty green seaweed, through the branches of which the water of a clear pool can be seen. On another, twigs of delicate ferns droop over the entrance to a little cavern. On a third a small palm tree grows out of the side of a steep rock over a plain. Mrs. Hughes is confident that what she has discovered is only the beginning, and that sometime the mysterious force that she has to such a slight degree brought under control, will become

an element of great importance in science and the arts."

So the human spirit communicates with its companions by physical means. The wonderful stream of complicated mathematical motion issues from a flesh and blood fountain in the throat, which itself is fed from a flesh and blood reservoir in the breast, of every human body. The exhaust life air of the lungs is passed through an instrument in the throat, which vocalizes it into audibility ; and further up on its way out, through the cavities of the mouth, which manipulate it into intelligibility. If the communicating spirit be a musician, his mouth breaks up the air-stream into such single art-forms, that they will affect the taste and feelings. If he be a speaker, he breaks up the vocal stream into such thought-forms, that they will affect the intellect.* The

**Of Flesh and Blood.**

**Capable of Speech and Song.**

*"Much has been said of the 'Language of Music.' This is but a rhetorical figure. Language is definite and states facts, the significance of which will depend upon the greater or less sensitiveness of the hearer. Music does precisely what words do not do. It represents a state of thought and feeling, more or less continuous, awakened by the statement of facts – a brooding over what has been said after the words are supposed to have ceased. Hence the propriety of prolonging syllables and repeating words."—HENRY C. DEACON.

singer breaks up sound into melody; the speaker breaks up sound into words. The object of the one is to communicate emotion, that of the other is to convey ideas. But melody pleases and stirs by an awakening and responsive power in itself, while words affect the understanding chiefly by the power of a conventional signification which has been placed in them.*

The twin arts, however, cannot afford to be independent of each other. The best

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*"The effect of abstract music—that is, music without words—upon the soul, though vague, weird, and undefinable, is so incontestable and all-powerful, that its immediate origin in nature itself can hardly for a moment be doubted. Musical combinations and progressions seem at times to recall something that does not belong to the present order of things, and to inspire almost a conviction that in another existence only, will the full scope and significance of abstract music be understood."

—H. C. DEACON.

The power of certain chords to awaken emotion is common to almost every person's experience. Richard Wagner, holding with Kant that the human mind cannot conceive of anything except as existing in the forms of space or time, also held to a single exception to this law. That exception is in the case of *harmony*. Harmony exists not in time, for the time-element in music is melody; nor does it exist in space, for the simultaneousness of tones is not one of extension or space. Hence our harmonic sense is not hampered by the forms of the mind, but gives us a glimpse of things as they are in themselves—a glimpse of the world as a superior spirit would behold it. And hence the mysterious superterrestrial character of such new harmonies as we find in the works of Wagner and Chopin—which are unintelligible to ordinary mortals, while to the initiated they come as revelations of a new world. See "Chopin and other Musical Essays" by H. T. Finck, p. 64.

song needs a basis of thought ; and the best speech needs a music of utterance. For the best music is not content to touch the emotions simply, but seeks to reach the understanding. Similarly the most perfect and finest speech is not content to inform the understanding simply, but seeks to gratify the taste and affect the emotions. Therefore music calls in both the thinker and his words ; and speech calls in both the artist and his melodious effects. The two arts are so mutually attractive that song is ever reaching out to thought, and speech is ever reaching out to loveliness of sound. Yet they are so mutually distinct in nature, object and method, that they dare never merge into identity.†

TO begin with the physical foundation, a speaker ought to understand the *mechanism* of his instrument. The whole apparatus includes the throat, mouth, and lungs, with sounding boards in the head and chest.

We all have noticed a prominence in the

†For the vocal difference between Speaking and Singing see page 84.

fore part of the neck, popularly called Adam's Apple. This is the organ of voice. Its name is the *Larynx*. It is a little triangular box made of cartilages. It is placed on top of the windpipe or trachea, and at the bottom of the pharynx, which is the higher part of the throat. It opens freely into the windpipe below. But the opening into the throat above, called the glottis, is protected by a spoon-shaped lid, termed the epiglottis, which raises itself when we breathe or speak, and shuts when we swallow, to prevent our food from "going down the wrong throat."

**Mechanism of the Instrument.**

The voice is generated in the little box. In it are two "ledges of elastic tissue," or ligaments, commonly called the "vocal cords." Fastened one on each side, they stretch themselves out across the box to meet each other, whenever we are about to speak. They thus form a double valve, similar to the tongue of an organ reed, to shut the passage through which the blast of air from the lungs must pass on its way to the mouth. In mere breathing, the valve is open and the two lateral membranes glide apart each to

**The Sound Generator.**

its own side, to allow the column of air to pass through freely.

But in speaking they glide to meet each other. They thus shut off the blast of air from the lungs, except a thin stream which escapes through a narrow elliptical rift in the middle, where the ligaments do not quite meet. The force of this escaping stream sets the edges of the ligaments in vibration. If the latter are stretched loosely across the opening, the vibrations will be large and slow and the pitch of the tone will be low. If tightly stretched, the vibrations will be short, and the pitch high. The tone will be loud or soft according to the quantity of air sent up from the lungs and the manner of expelling it.*

**The Tonal Column.**

These little membranous tongues vibrating like reeds,† transmit their vibrations to the column of air itself, that is passing through the box. This column, in turn, sets the air in the throat above, in

* It is not necessary here to describe the interacting cartilages of which the voice-box is built, nor the complicated sets of muscles by which the whole apparatus is adjusted and placed under our control; nor to assign it to its proper place amongst the tone producing instruments.

† The embouchure of the larynx is much similar to *double* reed instruments, like the oboe, etc.

the nasal passages, the bony cavities in the skull, and the mouth, in sympathetic vibration ; and finally issues from the mouth in a continuous stream of musical tone.

This stream of tone is distinctively colored and individualized in enrichment or sharpening by the peculiar resonances of the air chambers just referred to. Thus at the back part of the roof of the mouth there is a little swinging door or movable partition, called the soft palate, which greatly affects the results of vocalization. It swings between the mouth and the nasal cavities and can separate either from the throat. If on the one hand we swing it upwards, we shut off the nasal cavities, and send the stream through the mouth, thus forming the pure vowel sounds. The door, however, is never so tightly closed that co-vibration in the nasal cavities is prevented entirely, and—what is more important—the door itself is in a state of tension like a drumhead and transmits vibration through itself to the air in the nasal cavities. If on the other hand, we swing it downwards, we shut off the mouth from the throat, and the stream of tone passing through the nose, becomes tinged with nasal qualities. Up to a certain limit these

qualities are needed. They contribute to the brilliancy of the voice. When the nasal resonance is prevented by a stoppage of the posterior opening of the nasal passages, the voice will sound dull and muffled. It will be readily seen how important it is that the soft palate of the speaker be in a perfectly healthy state. If it is weighed down by an elongated uvula* or by enlarged tonsils, its action will be impeded and the speaker will be hindered in his utterance.

**The Distinctive Tones and Noises.**

But the continuous stream of tone we have been considering, could not at all serve to convey the many different shades of ideas in the mind. It must be cut up and modified into individual and distinctive bits of tone and noise. As each of these distinctive bits of tone and noise, has a well-understood conventional signification, it becomes possible to convey ideas through their use. They are the vowels and consonants, and comprise most of the noises which it is convenient for the human mouth to make.

To produce these distinctive and indi-

* The Uvula is a small, spongy, grape-shaped body suspended from the middle of the soft palate. It is frequently too much elongated.

vidually significant noises, the continuous stream coming up from the throat, is driven against and through a narrow enclosure which we form somewhere in the cavity of the mouth, front or back, and which differs in shape and size for each sound formed.

Thus in sounding the consonants B and P, the compressed passage is formed at the lips ; in the case of G and K the narrow passage is formed by pressing the body of the tongue against the roof of the mouth. In forming D and T it is the tongue's tip, pressing against the gums just over the upper front teeth and withdrawing with a snap, that makes the enclosure. So the letter S is produced by driving the air between the upper and lower teeth. Each of the consonants, has however, in addition to its distinctive noise, a proper musical tone of its own, which is of the same pitch always and under all circumstances, and is distinct from the musical tone and varying pitch of the vocal cords below.

Similarly in forming the vowels, the parts of the cavity in the mouth put themselves into varying relations with one another, and give every vowel its own tone and its own distinctive clang or noise, arising from the

striking of the air upon the soft and hard parts of the interior of the mouth.

Thus the speaker in reality uses a double instrument. The larynx originates, and the mouth modifies his tones. In case he only whispers, there is nothing heard but the vowel and consonantal tones and noises of the mouth cavity.* But when he speaks, the fullness, the melody, the reach and the music of his voice come from the vibrating vocal cords in the throat.

**Management of the Mouth.**

To dexterously manage the ever varying vowel and consonantal cavities, is to be distinct in articulation of the syllables, correct in pronunciation of the words, and effective and far-reaching in enunciation in general. Let the consonants be crisp ; the gutturals or nasals and sibilants, controlled ; and the vowels, clear and open. The chief thing to remember is that the characteristic noises of the letters, both vowels and consonants, should be formed with elastic quickness and forward in the mouth.†

*The whisper is possibly a sort of head voice.

†Distinctly, lightly, swiftly and elastically must the column of tone, rightly directed, strike the forward part of the mouth, which at the same moment opens widely enough to communicate without delay the quick agitation to the air external to it.-SEILER. The best results are obtained from complementary muscular acts practically synchronous..—BALTZELL.

Not only do indistinct and uncertain articulation result from the habit of forming the sounds far back in the mouth, but we notice that disagreeable quality of tone which conveys an impression as if the speaker had something in his mouth. Then, the more room we leave in the back of the mouth for the vibration of the throat's vocal tones, the greater is the number of overtones* accompanying them, and the more full and musical is the vocal effect. The handling of the consonants should be nimble and decided, and the utterance of the vowels sufficiently unhurried to render the whole effect melodious.

Impurities of articulation are the result of an involuntary and convulsive action of the throat, tongue, lips, or soft palate, on attempting to form a proper tone. This involuntary action either causes only an imperfect participation of the proper members, or draws in and involves other additional parts not needed for the proper formation of the tone. In case of difficulty of this kind, the best thing to do, is to analyze carefully each vowel and consonantal sound in the words causing trouble, and, after discovering the real seat of difficulty, to repeat very slow-

* For overtones, see p. 94.

ly the troublesome sound, first singly, and then in combination.

The whole finish of speech depends greatly upon the care, firmness and rate of rapidity, with which these bits of distinctive sound are formed and blended. "Not one in a hundred, scarcely, of ordinary mortals is free from defects in the powers of articulation," says one who has looked into the matter. There are two extremes, equally distressing to the auditor. A labored enunciation is very painful; an indistinct enunciation is disappointing and wearisome. On the one hand the words should be sufficiently near to each other to glide into a magnetic connection; on the other hand they should be separated well enough to completely shield them from coalescence. There should be an easy and continuous flow of the molten fire, but yet no confusion or blurring of the distinctive vocal elements.

Painfully distinct, piercing, labored utterance may be a matter of over-cultivation, or of natural ruggedness, or of slowness of thought. "Some speakers have a deformity, which no art can remedy, in their organs of speech, by which the sibilant words and syllables in our language receive excessive

utterance when uttered at all. The tongue and the roof of the mouth, with the upper jaw, bear such proportions to each other, that the euphonious medium between extremes in sibilant enunciation is impossible."

But sluggish, unfinished or elliptical utterance, as well as many vocal habits so offensive to the cultivated ear, are mainly a matter of thoughtlessness or indolence. In the case of laboriously distinct utterance the speaker pays too much respect to his own words ; in the case of unfinished or elliptical utterance, he appears to treat them with an unworthy disrespect. The one person is likely to magnify certain favorite sounds; the other is tempted to elide certain dreaded sounds or to drop parts of a sentence, in apparent contempt for what he himself is saying.

This is especially true of those who use the English language. "No nation in the civilized world speaks its language so abominably as the English. Familiar conversation is carried on in inarticulate smudges of sound which are allowed to pass current for something, as worn out shillings are accepted as representatives of twelve-pence. When English people begin to study singing, they

are astonished to find that they have never learned to speak.'"* Yet the English tongue is most effective for public speaking.† The writer just quoted, begins his statement by saying, "The *sound* of the English language is by no means as bad as it is made to appear." The might of its consonantal strength is not against it, but is in its favor. All it needs is mastery.

If the natives of southern Europe do call ours the "jaw-breaking language," because of the frequently recurring guttural, aspirate and sibilant sounds, we might retort by calling theirs the sugar-mouthed tongues. The Welsh language "presents to the uninitiated eye an appalling array of consonants," yet when sung, it is as sweet as any soft southern tongue. The Russian seems also to be very harsh indeed, yet when sung, it is said to well deserve the title of "the Italian of the North." The Polish is said to bristle with consonants, and still to be remarkable for its melodious beauty. A recent writer,

*H. C. Deacon.

† "The English language possesses a power which probably never stood at the command of any other nation. This singularly happy development and condition has been the result of intimate union of two of the noblest languages, the Teutonic and the Romance; the former supplying the material ground work, the latter the spiritual conceptions."—JACOB GRIMM.

comparing the Italian and German vocal styles, quotes Liszt as saying that, "The harshness of a language is by no means always conditioned by the excessive number of consonants, but rather by the way in which they are united; one might almost say that the weak, cold color of some languages is due to the lack of characteristic and strongly accented sounds. It is only an unharmonious combination of dissimilar consonants that offends a refined ear. The frequent return of certain well-united consonants gives shading, rhythm, and vigor to language; whereas the predominance of vowels produces a certain pallor in the coloration, which needs the contrast of darker tints."

There is no doubt whatever that in the fine art of speech, as in the arts of sculpture and painting, these 'trifles' are the last touches of perfection. Refined accent, articulation, pronunciation and enunciation give not merely finish and polish, but character to the spoken word.

Much depends upon the management of the speaker's mouth, but not all. His voice, in its pitch and power of intonation, in

**Management of Larynx and Vocal Ligaments.**

many of its subtle phases of resonance* and modulation, comes from the depths beneath the mouth. He must be in full command of the vocal ligaments in the throat and of the respiratory motions in the lower part of the lungs and the abdominal muscles.

We turn, then, from the management of the speaker's mouth, to the management of the vocal ligaments in his larynx. The point here, is to control the pitch and purity of their vibration. The speaker must learn to form a correct mental idea of the tone to be produced ; and then learn to accurately adapt the muscular parts concerned in the production of the voice, to a state known to be capable of producing the desired tone. The ear

*The sound produced at the larynx is nothing more than a "squawk," such as can be made by an India-rubber larynx. The nobility, the human and mind-expressing qualities of the tone are given it by the sympathetic resonance of the cavities of the head and chest. Beauty of tone depends almost entirely upon the quality of this resonance, just as the tone of a fine violin depends mainly upon the resonance of the instrument itself, and not so much upon slight peculiarities of the bow and strings. The bow, acting upon the strings, generates the vibration; the body of the instrument resonates the vibrations into beautiful tone.

The art of voice culture, scientifically understood, consists essentially of two parts—the easy and right generation of vibrations at the throat, and the awakening of proper sympathetic resonance. The statement is short ; but the process is long, since it must be applied to all parts of the vocal compass, and, ultimately, to all degrees of power.—W. S. B. MATHEWS.

will thus mentally hear and picture the tone in advance, and the muscular sensibility of the muscles in the larynx will recognize and reach that approximation of the vocal ligaments, which causes the tone to be formed. The precise amount of approximation is only to be secured after much mental and physical practice, resulting in a correct muscular habit. "With too close a chink the tone will be harsh and thin; if too wide, it will be flaccid and woolly."* It is obvious that the speaker and singer need to cultivate the power of mental imagery and direction, more than the instrumental performer does, —the latter's tones being fixed to a greater or less extent by his instrument. With practice the picture of the tone and the picture of the proper muscular effort needed to produce that tone, come to the mind of the speaker or singer as readily as the latter does to the player on any musical instrument.

Nevertheless the mind sometimes lacks control over the laryngeal muscles governing the pitch of the voice; or it may lack the power of accurately distinguishing the character and pitch of tones recorded by the ear.

* H. C. Deacon.

And so the voice may be incapable of accurately producing a tone which the ear has mentally heard in advance, and the ear may be unable to recognize with certainty a tone produced by the voice. It may also be well to bear in mind, that the effect of a tone, apart from its pitch, upon the ears of another, cannot be exactly pictured to our mind. The speaker does not hear his own tones as others hear them, and would scarcely recognize his own voice, if he could hear it apart from himself. The sounds come to his auditory nerve from *within*, as well as through the air without, and he hears in addition, the contractions and workings of his own vocal machinery. Sir Morell Mackenzie illustrates this fact by referring to the phonograph. He points out how a listener can recognize other people's voices in it, but if he speaks into the phonograph himself, and afterward reproduces his own voice, it does not sound at all like itself to him, because he does not hear it in the manner he is accustomed to, and because he hears it stripped of the various accompanying sounds which are usually associated with it to his ear. It is on this account that persons who insist on singing or speaking to their own satisfaction alone,

frequently do so to the dissatisfaction of all their auditors.

At the instant of speech, by adjusting the larynx with enough fixity to resist the pressure of the air from below, the muscles governing the pitch will act with greatest ease and certainty. The attack should be prompt. The tone should be struck firm and clear, avoiding alike the check of the glottis and the glide of the glottis. This 'simultaneous action' is illustrated by my friend, W. J. Baltzell,* as follows: Whisper the word "up" rather vigorously. If you hear a sound as of a bubble of air being burst, there is too much stiffness in the larynx. You have the "check of the glottis." If the sound becomes aspirated, the cockney's "hup," the "glide of the glottis" is produced. But if the sound comes clear and distinct, without aspiration or broken bubbles, there is reason to believe you have produced the tone properly. The degree of approximation to perfection is dependent upon careful practice.

The tone should at once be sent up into the forward part of the mouth. The atten-

* To whose clear knowledge I am indebted for critical suggestion, technical elucidation, and for additional facts and statements, in various parts of this work.

tion should be concentrated on forming it there. Pitch, color, quality, loudness, should be separated from the tone, in thought, and our greatest attention should be directed to forming the tone in the forward part of the mouth. We must further, try to *keep* the tone there. "If the speaker feels as though it went away from him, and he had to run after it to catch it, it will never be a 'telling tone.'"

No more breath should be used than is actually necessary, else "the tone will be diluted, as milk is diluted by the addition of water." The speaker should have plenty of breath, but under control. He should begin to speak with the chest full of breath, expiring as he speaks, and taking in a new supply whenever it is possible to do so, conveniently, whether a new supply of air is immediately required or not. It is wrong to begin to speak with the fag end of the breath, and equally wrong to completely exhaust the supply of air just taken in before commencing another inspiration. "Nothing so much enfeebles the voice and eventually leads to complete exhaustion as phonation with the fag end of the breath; while, on the other hand, the

habit of keeping the lungs well-stocked with air helps to make the voice strong and resonant, and enables speakers and singers to preserve freshness to the end of their tasks."

We should speak softly, but vigorously. Loudness is not essential to force or beauty. "The telling quality of laryngeal tones depends solely and entirely on the amplitude of the vibrations, and this is controlled by the will which directs the due proportion of air to set the vocal cords into more or less full vibration." The lower muscles of the trunk are the fulcrum power of the voice. To speak without them is like lifting a heavy weight from an unnatural position. By careful attention to the management of these particulars, it is possible to gradually develop volume, and power of exact execution.

So soon as laryngeal fatigue is experienced the speaker should stop.* It is felt in the

*The conductor of a choral class is too often unaware of the danger of an arduous rehearsal of two, three, or four hours duration, to so delicate an instrument as the human throat. By such an amount of practice the voice becomes utterly fatigued. If the muscles of the larynx are strong, the fatigue shows itself in hoarseness, or a difficulty in making the voice speak readily, and the delicate white membrane which lines the vocal cords becomes slightly abraded. If this membrane is capable of supporting a good deal of "leathering," then the muscles will first show the fatigue, and the voice will not be able to keep in tune. If both

larynx as a contraction of the closing muscles, which leads to jerky and noisy breathing. Purity of vocal tone is painfully impaired, and the voice becomes weak in intensity, unequal in power, veiled in quality, quavering and shaky in utterance. All the refinements in vocalization are also rendered uncertain. The speaker oftentimes endeavors to overcome these laryngeal defects by the use of the muscles of the pharynx. Such muscular action, causing undue struggles with the opposing muscles, is very harmful. The habitual faulty use of the vocal muscles will bring on a congestion of the vascular supply to the mucus membrane, disorder of the secreting follicles, irritation of the sensory nerves of the throat and uncertainty of action of the vocal muscles, each resulting in hoarseness and deterioration of power both to produce and to control the desired tones. There is no doubt that chronic granular inflammation of the pharynx (so-called clergy-

the muscles and membrane are strong, the chest will feel the fatigue, even the ribs getting tired, and headache will set in. If these local signs of distress are absent, general fatigue of the whole physique will come on. Every organism has its alloted amount of energy, and no more. If the abrasion of the white membrane is frequently renewed, cicatrization will be the consequence, and then good-bye to all sweetness. If extinction of the voice has not taken place, we shall have a tone that nobody wishes to hear a second time.—H. C. DEACON on Singing.

man's sore throat) is the commonest disorder of voice-users; and in our experience it is always accompanied—we would even say caused—by faulty voice production in the larynx, *i. e.*, by forcing the registers beyond their natural limits, which has led to consequent straining, forcing, and congestion in the upper or resonant portion. The symptoms are those of altered secretion just described, irritation, with prickings and functional fatigue; later we have impaired quality and actual loss of notes; if unchecked, there arrives a period of complete suppression of, at first, the singing, and then even of the speaking voice, due either to want of control over the voluntary muscles of articulation or to loss of power in the automatic laryngeal muscles: sometimes to both causes combined. Treatment of this condition is of two kinds, each equally important—first, medical, both general and local; and secondly, educational. Self-measures do harm.*

Whenever the voice is not at its best, whether worn to fatigue, or affected by any ailment, it would be well not to use it. It

*Adapted from Brown & Behnke's recommendations to singers in their "Voice, Song and Speech."

is a very sensitive instrument. The slightest cold may deaden the vibrations of the ligaments, and the resonators may be thrown out of tune by dryness or excessive moisture of their lining membranes. Indeed any bodily weakness or indisposition is likely to be reflected in the voice ; the ligaments do not come firmly together, and their tension is insufficient for perfect purity, much less for richness of tone. It is thus, too, that abuse of the body and mind by dissipation comes in time to tell its sad tale through the voice. Nothing gives richness and volume to the voice like vigorous health. "An experienced ear," says a great physician, "can often tell a man's physical condition by the full, generous 'ring' of his tones, both in singing and speaking."

Nor should a speaker ever try to go beyond the limits of his vocal powers. He should find out exactly what they are, and then even under the temptation of high excitement, keep carefully within them. "There are orators the *crescendo* of whose enthusiasm expresses itself in increasing intensity of shrillness." Persons who are in the habit of losing their temper, or of wrangling with people who will not listen without

interruption, and who try to shout down those with whom they are conversing, can expect nothing else but to find harsh and noisy tones predominant in their voice. Even the bitter sting, or sarcastic rasping, or dogmatic over-confidence of a temper which asserts opinions loudly, and looks round to command approval or challenge contradiction, will at last leave its taint on the voice.

"The old Greeks set it down as an axiom that a loud or harsh voice betokened bad breeding, and any one who hears the lower classes discussing any topic at the corners of the streets, may notice not merely their coarseness and rudeness in expression, but also the loudness and harshness of their voices, in support of this observation. Contrariwise, nothing attracts more at first hearing than a soft sweet tone of voice. It generally suggests a deeper well of feeling than the speaker possesses, and certainly prejudices people as much in his favor as a grating or loud utterance repels them. It is to be classed with personal beauty, which disposes every one to favor the speaker, and listen to him or her with sympathy and attention. This sweetness in the tone of the

voice is chiefly a natural gift, but it may also be improved, if not acquired, by constant and careful training in early years."*

Oliver Wendell Holmes, speaking of a charming American girl, in a recent number of *The Atlantic Monthly*, goes on to say: "The great trouble is with her voice. It is pitched a full note too high. It is aggressive, disturbing, and would wear out a nervous man without his ever knowing what was the matter with him." But this penetrating, perturbing quality of voice has a great deal more to answer for than the private matter of determining love and friendship between two. It is this that unnerves and wears out the regular hearers of many a preacher, professor and school-teacher, without the auditors 'ever knowing what is the matter with them.' Dr. Holmes describes the far different effect of an agreeable and cultivated voice: "You remember that dear friend of ours who left us not long since? If there were more voices like hers, the world would be a different place to live in. I do not believe any man or woman ever came within the range of those sweet, tranquil tones without being hushed, captivated, entranced I

*Prof. Mahaffy.

might almost say, by their calming, soothing influence. Can you not imagine tones in which those words, 'Peace, be still,' were spoken? Such was the effect of the voice to which but a few weeks ago we were listening." Other things being equal, Dr. Holmes thinks that a very sensitive man would live from two to three years longer with a woman who has a very agreeable voice, round, mellow, cheery, and a charming articulation, than with the other. "I suppose a man who lived within hearing of a murmuring brook would find his life shortened if a sawmill were set up within earshot of his dwelling."

It is a great mistake to think that perfect habits of speech come naturally. The ordinary conversation of the majority of people, both young and old, and even that of nurses and teachers,* is incredibly slipshod. To say nothing of a refined accent and finished articulation, their tone-production is frequently very faulty. And so the college graduate who can work out the most intricate problems in mechanics or acoustics, who has been in training for the boat race, who has given years to the acquirement of many lan-

*"Elocution is a moral faculty; and no one is fit to be the head of a children's school who is not both by nature and attention a beautiful speaker."—RUSKIN.

guages, who can play on many instruments —from a flute to a pipe-organ,—actually does not know how to manage the instrument in his own throat, and has never tried to learn to speak. When then he gets up in public for the first time, he is "all at once made aware that the vocal production to which he is habituated fails him utterly. He makes a variety of impromptu experiments in pitch and intensity, some of them ludicrous, and all unsuccessful; and having soared to heights unsustainable by human throat and insupportable to human ear, he drops past that mean elevation at which alone he might have poised himself securely, and plunging 'deeper than ever plummet sounded,' is lost in an incomprehensible growl."

It was not so of old. Plutarch, describing the ten orators of Greece, is careful to mention that they had excellent voices, and to tell how some of them at least, took pains to train and learn to use their voices. Yet our speaking is such a ready process and becomes so automatic in its motions, that we can scarcely persuade ourselves to examine into elementary details, which we feel that we have mastered already in early childhood.

But suppose that our mastery is wrong, or imperfect, or injurious, leading to results described above? Then we should not hesitate to break up the old and to acquire sound physiological habits. Perfect control over lips, tongue, palate and chest; and especially, perfect control of the larynx, by a proper habit of setting the ligaments into vibration, by the automatic and immediate mastery of the complicated muscular actions, and delicate nervous adjustments, by an eradication of every faulty action, and by a proper care of the organ, does not come naturally, but requires patient practice and observation.

Besides the management of the *mouth* in articulation, pronunciation, enunciation; and the management of the *vocal cords* in tone production, the speaker must know how to work and manage the *bellows* beneath them. This involves two points, first the permanent acquirement and possession of wind force, second its control and application during the act of speaking. "It should be clearly understood," says Sir Morell Mackenzie, in an article in the *Contemporary Review*, "that public speak-

**Management of the Lungs.**

ing, in addition to its intellectual aspects, is a physical performance which requires 'wind' and 'muscle' and the perfect management of one's bodily resources, like any other athletic feat. To attempt to speak in public without previous training is like trying to climb the Matterhorn without preparation.

"In antiquity the training of an orator was almost as elaborate* an affair as the training of a race horse is with us. . . . That it was eminently successful is shown by the powers of endurance which it is clear the ancients must have possessed. They habitually spoke for five or six hours, and even longer, and, in order to appreciate their staying power, it must be remembered that they spoke in the open air, amid all the tumult of the forum, which was capable of holding eighty thousand people, and with an amount

* "The discipline for the formation and improvement of the voice among the Athenians was so comprehensive that, as we are informed by Roman writers, not less than three different classes of teachers were employed for this purpose, viz., the vociferarii, phonasci, and vocales. The object of the first class seems to have been to strengthen the voice and to extend its compass; the office of the second to improve its quality, so as to render it full, sonorous, and agreeable; while the efforts of the third, who, perhaps, were considered as the finishing masters, were directed to the proper intonation and inflection."—'Philosophy of Voice and Speech, by James Hunt, 1858.' Cited by Brown and Behnke.

and vigor of action of which the gesticulations of an Italian preacher are but a pale reflex."

In order to acquire the necessary chest development, the speaker must cultivate proper habits of breathing. The diaphragm is the principal muscle of respiration. It contracts downwards, producing a vacuum, and the air rushes into the lungs. The chest wall is lifted up by the thoracic or intercostal muscles. The lower ribs have the most freedom and widest range of motion, and the bases of the lungs are the most capacious and active. The bronchial tubes are so arranged that they carry the inspired air with greater facility to the bases than to the apices. The apex of the lung is its most inactive portion, and it is there that phthisis begins, unless it be superinduced by another disease of the lungs.

It should be a constant function of the speaker's daily life to breathe so deeply, with the motive power applied to the diaphragm, as to bring into play every muscle and organ within the whole range of the respiratory system at each successive breath. The intercostal muscles seem to get proper exercise in no other way ; and not only are the mus-

cles of the side and back strengthened, and the lungs rendered capacious and flexible, but as the bones and tissue of a well-inflated chest vibrate in sympathy with the vocal cords, the reverberating power of the speaker's voice is greatly augmented by such respiration.

Smart exercise of any kind, and especially the cultivation of vocal gymnastics, does much to develop the lung tissue. During inactivity a person ordinarily breathes only one-seventh as much air as he would if he walked at the rate of six miles an hour. In singing this is increased more than in walking, as to sing well requires all the capacity of the lungs. The fact has been asserted that nations given to the cultivation of vocal music are strong, vigorous races, with broad, expansive chests. It is also said that the lungs of improved breed domiciled animals and of men who lead inactive lives from civilization are considerably reduced in size when compared with those of animals running at liberty and of men leading active lives. It has been calculated that there are no less than six hundred millions of air-cells in the lungs of a full-grown man.

But it must never be forgotten that it is

quite possible for the speaker or singer to *overcrowd* his lungs with air. This will lead, sooner or later, to forcing and inequality of voice, and to congestion of the vessels and tissues of the throat and lungs. The possession of strength may only serve to abuse the vocal organs. The strength may be wrongly applied. Instead of bringing out fine, deep chest tones, capable of expressing with dignity the tenderest and most passionate emotions, the speaker may use his strength to produce the enforced throat and head tones, often so piercing, shrill and unpleasantly penetrating. In such cases of loud speaking a tremendous and abusive force is applied to the slight and delicate vocal cords in the throat-box. Or the speaker may apply the force to unnaturally enlarge the windpipe by pressing into it the full column of air needed in forming the low tones which should be formed in the natural way without such pressure. We then hear the dry, raw clang of the "straw bass." Persons accustomed to speak in this way, should at once change the location of the tone. The strength ought to be applied by the speaker to the muscles of the diaphragm and abdomen. Mere ruthless application of

brute force to the vocal instrument not only injures the musical effect, but endangers the voice's own preservation. By and by the strain on the muscular parts begins to tell. A dryness of the mucus membrane of the pharynx and a peculiar huskiness of the voice is perceived. A hacking cough sets in. The huskiness increases. Finally the voice is "lost," as has been already described in speaking of laryngeal fatigue. Speakers as a rule do not seem to realize that the trouble arises from the abuse of the throat in speaking, but attribute its origin to exposure to a draught of air during or after speaking.

There are three possible ways of breathing. The speaker should contract and lower the abdominal muscle ; instead of applying the force to the sideways extension of the ribs ; or to the raising of the shoulders with the collar-bones, the shoulder blades and the upper part of the chest. This last way is pernicious. It is said to be at the root of most of the troubles described above. It renders the respiration labored, fatiguing, gaspy, and insufficient. It places the pressure upon the upper parts of the lungs ; and besides, the exhausted and poisonous air, sinking and settling in the lower and most

capacious portions, is not expelled, but left comparatively undisturbed. The criterion of a correct inspiration is an increase of size of the abdomen and of the lower parts of the chest. *Whoever draws in the abdomen* and *raises the upper part of the chest*, breathes wrongly. To inhale properly, he should push down the diaphragm and protrude the stomach.*

Breathing should always be through the nostrils. The influence of the nose upon the voice is very great. Many persons seem to be ignorant of the usefulness of the nose to themselves. The cavities of the nose are two, and are divided by a long partition, called the septum. Each cavity consists of three channels. These are very irregular in construction. They not only have much to do with the resonance and timbre of the voice, but they are also so contrived as to temper the air we inhale so that it may not strike cold into the vocal apparatus. They, further, arrest the impurities, dust, particles

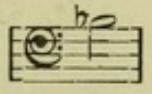
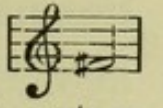
*Nevertheless, Sir Morell Mackenzie maintains that the natural abdominal mode of breathing in singing is not the most effective. He says that by greatly expanding the lower ribs there is far more control over expiration than when the diaphragm is displaced. Abdominal inspiration is apt to be followed by jerky expiration, whereas intercostal breathing can be absolutely regulated by the will to suit the requirements of the vocalist.

of organic and inorganic matter, that are always floating about in the atmosphere. Therefore the nostrils are an apparatus both for warming and filtering the air. Nasal breathing also saves those muscles of the mouth and throat, that are used in articulation, so that they are not fatigued by unnecessary and contrary actions. Mouth-breathing is unfortunately sometimes unavoidable in speaking, but not by any means as often as is generally supposed. It is possible to learn to inhale through the nostrils though there be no time to shut the mouth, and without interfering with the quality of the tone. Faustina is said to have had such extraordinary powers of respiration that it was supposed she could sing both inspiring and expiring.* Mouth-breathing always sets up an irritation, and every possibility of breathing through the nose should be taken advantage of.

**Registers of the Voice.**

If the speaker abstains from force and cultivates moderation in the expenditure of breath, the vocal ligaments will move in large, broad, loose vibrations, producing the lowest and strongest tones of the voice with their characteristic

* H. C. Deacon,

timbre. With every higher tone, he stretches the ligaments more and more, and shortens the narrow vent between them, through which the air must pass. Finally, he comes to a point where he feels he must alter his method of production, if he is to go higher. He must now step from the "lower" to the the "upper story" of his voice.  When he reaches this point, namely, b flat in the pitch of tone, the narrow vent is shortened about a third more by the closing of the arytenoid cartilages, and the ligaments appearing to be relaxed again, take a new start in the stretching process. It continues, until the f sharp  above is reached, when the voice enters the falsetto* register. A register, then, is

*There has been much confusion as to the precise application of the words "falsetto" and "head voice." The tendency now seems to admit the following distinction. The falsetto voice is peculiar to men, while the head voice *may* exist, and commonly does, in both men, women, and children. The falsetto is of easier production to basses than to many tenors. Yet it must not be forgotten that the same note may be produced in various ways, as for instance starting with chest voice, then modifying to head voice, and closing with falsetto. This order can not be reversed. There are anatomical reasons on which the distinction between falsetto and head voice rests.—W. J. BALTZELL.

"Falsetto, is that artificial method of delivery, by which the limited 'short reed' [*i. e.*, "head"] register in men is forced upward beyond its natural compass. In this mode of production the air is blown up from the lungs so gently that it has not sufficient power to throw the whole thickness of the vocal cord into vibration."—MACKENZIE.

'a series of tones of like quality produced, by a particular adjustment of the vocal cords to receive the air-blast from the lungs."

Our lowest tones up to the b flat where the narrow vent is shortened for the first time, constitute "the chest register" of the voice. The tones from this first shortening up to the next shortening above, constitute the "head register." The falsetto register belongs to men alone; and in it, the head register is forced upward beyond its natural compass. The tone in all these registers is invariably formed in the larynx, but the two main registers receive their name from the fact that the one set of tones draws its resonance chiefly from the chest below; the other, chiefly from the head above the larynx. In the chest voice, the vocal cords vibrate in their whole length, and the sounds are reinforced largely by the cavity of the chest, the walls of which can be felt to vibrate when this register is used. In the head voice, only a part of the cord vibrates, as mentioned above, and the sound is reinforced by the upper resonators, the mouth, nasal passages, and the cavities of the head. "It was the constant aim of the famous old Italian singing-masters to *unite* the two natural

registers so perfectly that no break should be perceptible" in singing. In the middle of the voice the two registers overlap, so that a few notes can be sung in either register. The greater part of a man's voice is in the chest; and of a woman's, in the head register.

**Technique of Speaking.**

The proper management of the mechanism of tone-production might be styled vocal technique. In the case of a performer on a musical instrument, technique implies a faultless mastery of every mechanical difficulty in the required tempo, and without any perceptible effort. It requires a precise touch, with appropriate degrees of strength and gradations of strength. It is just such a mastery that the public speaker needs over the vocal instrument in his own body. It has been possible to train the singer's voice to a wonderful power of exact execution and perfect balance. Porpora's famous pupils, Farinelli and Cafferelli brought their vocalization to such a grade of perfection and exactness that they must have sung with the precision of an instrument.*

* H. C. Deacon.

On the other hand, as we shall see, a mere mechanical mastery of the instrument is far from being the whole of speaking. What Christiani writes of piano playing is equally true of the vocal art. "Technique," he says, "should not seek to shine by itself, and least of all give the impression of being the performer's strongest point. It is not so much a question of playing, as to play in the spirit of the composition. Technique, being mechanical rather than artistic, does not of itself make the artist, and giving evidence of persevering labor rather than of talent, ranks, aesthetically speaking, lowest among pianistic attainments, although it is really the most brilliant of them and absolutely indispensable."

**Force and Strength of the Instrument.**

FROM the mechanism of the speaker's instrument, we turn naturally to look at its Force and Strength. The speaker needs power in his voice for two reasons: first that his tones may travel unimpairedly and with ease to the furthermost reach of his audience, and second that they may leave an adequate im-

pression upon the individual consciousness of every hearer. Effective speech needs both to reach and to impress.

The reach of a disciplined human voice is truly remarkable. The "All's well" of the soldier at Gibraltar is said to be heard out on the water twelve miles; whereas it is considered an unusual thing that the voice of a bell can be heard through and across Lake Geneva, a distance of nine miles; or that the old City Hall bell in New York should be heard up the Hudson river thirteen miles in the night. The roar of the cannons' mouths are said to have been heard two hundred miles away in naval battles, and the thundering throat of the terrible volcano has been recognized three hundred and forty miles away, the greatest distance known for sound to travel. The human voice is a small thing in power, compared with the mighty engines of war, or the fearful energy of a volcano's crater. Yet it need not be ashamed of its records.

When the "slender, middle-sized, unimposing," Whitefield preached from the steps of the State House in Philadelphia, he was said to have been heard across the Delaware river in Camden. When George Washing-

ton and his army crossed the Delaware, the stentorian power of the voice of Colonel Henry Knox, an officer of artillery, is said to have caused orders to be heard from one side of the river to the other. John Wesley at the age of seventy preached to more than thirty thousand people, and was easily heard by them. This was in the celebrated amphitheatre of Gwennap Pit, where he delivered his first sermon in 1762, and his last, at the age of eighty-six, in 1789, to the rugged miners, fishermen and wreckers of the wild Cornwall coast.

The open-air speaking of the ancients to vast audiences demanded voices even more powerful. When Demosthenes delivered his speech on the Crown, Cicero tells us that the people flocked to Athens from all parts of Greece. The Cavea in the Attic theatre must have held about fifty thousand spectators. The first stone theatre in Rome, built by Pompey, B. C 55, had room for forty thousand spectators, while the Colosseum, begun by Vespasian, dedicated by Titus, finished in the reign of Domitian, was capable of containing about eighty-seven thousand spectators. We hear of Berthold of Ratisbon with audiences of sixty or a hundred

thousand, in a field near Glatz, in Bohemia.

The speaker's voice will sound loud or faint to his hearers, in proportion to its distance from their ears, to the density of the air in which the tone is generated, and to the amplitude or largeness of the tone. This amplitude of tonal vibration is the chief factor in the reach or "tellingness" of a voice, as Dr. Walshe would call it. It does not depend so much on the power of blast, as upon smartness of attack; absence of superfluous, and therefore disturbing breath; forward production of tone; and perfection of resonance. It is not the volume, but the *initial projection* and *velocity*, the *purity* and the *harmony* of the volume, that tells.

In reaching and impressing great numbers with the voice, the chief thing, therefore, is management rather than mere loudness. Public speakers, on realizing that their vocal power must contend against great numbers, generally raise their voices to a shriek or a shout, and thus make the mistake of substituting pitch for force. They sacrifice purity, flexibility, and character of tone with corresponding gain in reach, and with great loss of impressiveness. Mere noise and straining physical exertion are a mis-spent waste.

Both the scientist and the artist point out the falseness of the prevalent idea that greater reach and force can be attained by a very powerful use of the breath and by downright bodily exertion ; and unite in saying that the vibrations which give the strongest tones without destroying their form are obtained only by a quick and elastic beginning of the tone with but a moderate expenditure of breath.

We have already referred to the fact that many speakers turn the sublime into the ridiculous, when they attempt to rise to a climax of impressiveness by not knowing the exact limits of their vocal power, or by not restraining themselves within those limits. Mr. Bright certainly did not have a mighty voice. Yet we are told that his use of it always gave one the impression of a large reserve of power. "There seemed to be no effort in his delivery, even when speaking to a mighty concourse of people, and yet his voice was

'To the last verge of the vast audience sent,
And played with each wild passion as it went.' "

Edward Lloyd, the famous English tenor, could be heard plainly even in piano pass-

ages, from any part of the great Cincinnati Music Hall notwithstanding an accompaniment of an orchestra of 120 men. Mr. Lloyd did not depend upon power, but upon purity, precision, and careful management. Upon the occasion of the great musical festival in Boston, 1869, it was a matter of universal wonder that with the powerful chorus of 10,000 voices, Madame Parepa Rosa's tones were heard with such distinctness that even at a considerable distance the words were plainly understood.

The ringing softest tones of a great speaker will so completely fill even the most spacious edifice, that they are not only distinctly heard, but almost felt, while the discordant noises of a mere shouter, however loudly he may speak, do not penetrate to any distance. The speaker who can make himself heard in such a soft tone will probably have no difficulty in increasing its volume and power, but he who relies upon force, will, when he speaks less loudly, render himself to that extent the more inaudible.

In fact, the ultimate secret of a speaker's effective and impressive audibility goes behind the physical mechanism, and is to be sought in the soul. "True force," says an

elocutionist of the higher order, "includes the idea of moral power, and is often more manifest in a certain stateliness or majesty of tone than in great exhibition of voice and manner. It is the result of a uniform intensity of the whole being, and of such a repose as will reflect reserve power, which is, after all, the truest force."

At the same time the occasional use in climax of a magnificent vocal reserve under control, to its full extent, and the auxiliary of a powerful and commanding physical presence, animated and spiritualized by the grandeur of the truth striving for utterance from within, will be deeply and mightily impressive. When Daniel Webster stepped forward in the Senate of the United States, "his bronze complexion glowing as with inward fire, his brow clothed with thunder, his eyes blazing with lightning, both arms raised, and his huge form towering in all its majesty," and uttered the word '*combatant*' so that it "weighed at least forty tons," the effect produced is said to have been indescribable.

A naturally strong voice will permit the use of greater force as a rule, and apart from climax. The power of Pitt's full and son-

orous voice, added not a little to the effect of the long succession of round and stately periods poured forth by it against the wisdom and eloquence of Fox, Burke, Sheridan and North.

Lord Brougham, who gives us our knowledge of Pitt's eloquence, had himself a voice not merely powerful, but of extraordinary compass. It is said that Chatham's lowest whisper was distinctly audible; his middle tone was sweet, rich, and beautifully varied; and when he raised his voice to its highest pitch, the house became completely filled with the volume of sound, and the effect was awful, except when he wished to cheer and animate. Then he had a spirit-stirring note which was perfectly irresistible. Henry Clay's voice is said to have possessed a similar range. "Soaring with the grand and descending with the pathetic, it had a marvelous compass, and its trumpet blasts were not more audible or thrilling than its veriest whisper. Burke's voice, on the other hand, was a loud cry, which tended even more than the formality of his discourses, to send the M. P.'s to their dinners." The full compass of a

**Range and Compass of the Instrument.**

voice is rarely used in speaking. A speaker is said to employ only the lower third of his voice as a rule.

The human ear is able to perceive musical tone in sounds made by bodies that vibrate between 32 and 33,768 times per second. In other words, the ear has a range of eleven octaves. All human voices have ever kept within six of these eleven octaves. Yet that is an astounding compass for such a small instrument, if it be compared with the range of such a large instrument as a piano. A basso named Gaspard Forster went down as low as the fourth note (42 vibrations) above the beginning of musical tone (32 vibrations). The highest tone reached by any human voice is the first in the sixth octave (2048 vibrations) above the beginning of musical tone. It was given purely, according to Mozart, by a singer he heard in Parma in 1770. Between these two limits of tone the possibilities in range for the human voice lie. Nilsson is able to take the fifth note (1365 vibrations) below the beginning of the sixth octave. One of the sisters Sessi; Catalani; and Farinelli, an artificial soprano, each had a range of three and a half octaves. The voice of Fischer, a powerful German

bass, began six tones above the lowest note reached by Gaspard Forster, and was of extraordinary range without falsetto. Bass voices beginning a note or two above Forster's are said to be not uncommon in Russia. But their compass is generally limited. "A family of Russian Jews, of three generations, sang together in London about the year 1843. The grandfather, with a long patriarchal beard, sang down to A below the bass stave, but he had not many notes, and was in fact a contra-basso. He only vocalized, and that in part-music." The fact seems to be that this Russian ground bass is specially cultivated for the musical service of the Greek church. As no instruments are used in the service, these voices take the place of the large Bourdon pipes of the church organ.

The ordinary range of the human voice, from lowest bass to highest soprano is about three octaves. It extends from the fourth tone of the second octave above the beginning of musical sound, to the fifth tone of the fifth octave. The compass of a single voice is nearly two octaves in singing. But in speaking the range of tone is said to scarcely ever exceed a half an octave. Most

of the words in every sentence are uttered in a tone constantly gliding, but not much, above and below an ordinary monotone, with a variation upwards or downwards in certain parts of the sentence, mostly at the emphatic word and at the sentence's end. The *level* of the monotone in any person's public speech is generally different from that of his private conversation. In the former case it frequently is higher. Hence he is said to "raise his voice" in beginning to address a multitude. If the monotonous level is too regular and unvaried, the life of the communication is deadened. This is especially so, if the rise and fall at the end of every sentence be identical, and the rate of utterance be measured. The monotonous level, regularity of cadence and slowness of measure, produce the effect of chanting. But if in place of a monotonous level, the speaker launch out into every sentence, and move through it, and emerge out of it, in a series of identical swells, more or less complex, he has fallen into a "pulpit tone."*

Frequently a voice of great compass goes to waste in this way: Its possessor does not

* See page 140.

know how to utilize the varieties in its tonal range, and is too awkward in its handling to bend them to the precise expression of his thought. This power of readily running through its own varieties not merely of range in pitch, but of force, quality, timbre, intensity, and of bending them to precise expression is the voice's *flexibility*. The flexibility chiefly depends upon the control we have over the muscles governing the pitch ; that is to say, upon "the readiness and exactness with which we are able to allow them to contract or relax." By properly exercising these 'stretching and slacking' muscles of the larynx, the power of utilizing the varieties of vocal possibility, may be greatly cultivated. It was this power that the voice of the elder Pitt possessed to such distinguished degree. There is no artificial musical instrument capable of so great variation ; sometimes it is a flute, sometimes a trip-hammer, sometimes a thunderbolt. There is no other so flexible and so changeable at will. For the voice is not "dependent for its resonance on a rigid tube, like the flute, or an unchangeable sounding-board, like the violin or the piano, but on the cavity

**Flexibility of the Instrument.**

of the mouth, which can be enlarged and altered at will by the movement of the lower jaw, and the soft parts—the tongue and the glottis. These movements change the overtones,* of which the vowels are made up, and hence it is that the human voice is capable of an infinite variety of tone-color, compared with which Wagner admits that even 'the most manifold imaginable mixture of orchestral colors must appear insignificant.' "

When the voice of good quality unites agility and spontaneity with flexibility, it becomes a lovely instrument to listen to for its own sake, and in so far may at times even serve to weaken the spiritual hold of the speaker on his audience. The enjoyment of the tones is so delicious that the thought is not attended to. Giuglini was said to be a graceful and charming artist to be listened to, but the extreme sweetness of his voice and its lack of mental and emotional vigor caused his hearers 'to wish for something more.' Indeed, in the case of the singer, there is a great temptation to sacrifice the higher purposes of the art to a mere dazzling display of ornamental vocali-

* For "overtones" see pages 93 and 118.

zation. The marvel of the runs, the tremolo of the trills, the crescendo and diminuendo of the volume degenerate to the exploitation of a virtuoso. Thus does vocal art become a snare. When people come together to listen to a speaker or singer with the same feeling with which they come to hear the famous sopranist Farinelii eclipse a German trumpeter in the prolonging and swelling of his notes, the human voice has usurped the place of the human soul. The servant is masquerading with the crown of its master.

In referring, just above, to the resemblance of certain kinds of speech to chanting, the fact appeared, that our vocal organs are capable of modes of utterance other than speaking. All possible utterance is either noise or tone. Tone has been divided into speech and song. Yet speech contains elements of noise as well as of tone; and the term "song" scarcely covers the entire range of musical utterance. Our utterance, to be more precise, may be in the form of intonation, of the chant, of discord, of speech, of melody; and, in the case of several voices, of harmony.

**Forms of Utterance.**

The usual modes of utterance are by speech and by song. Speech and song differ in a number of ways. The first and most striking difference concerns the way of changing the voice's pitch. In speaking, the voice glides up and down at its own sweet will, swerving in pitch all the time, with the varying pitches differing but slightly from each other. The pitch of the tone is constantly varying, even during the utterance of the same sound. Now it is rising, now it is falling, but the tone itself flows on continuously, with great uncertainty of time and irregularity of rhythm. In singing, on the other hand, the pitch is quite certain. Instead of gliding up and down, the voice sustains itself at a single invariable pitch for a period long enough to produce a musical note. Then by an abrupt leap, it springs or drops to another pitch where again "the isochronism of vibration" continues long enough to produce another musical note. To speak is to emit tone in a continuous, irregular glide. To sing is to take separate, definite, prescribed tonal steps, according to the laws of time and rhythm. The more sympathetic and emotional speech becomes, the more it

**Speech and Song.**

tends toward song, being more pure in production of tone, ranging more widely through the gamut, and taking on more of the cadences of music proper. Yet it never loses the form of speech. Sympathetic speech is so varied in its inflections that it strikingly preserves itself from the forms of song. Sleepy speech falls into those forms, yet increases neither purity nor range. Musical speech differs utterly from measured sing-song.

Song also differs from speech by regularly employing a greater compass of tone. In ordinary speaking we secure an audible quality of tone, but one which is not strictly musical, by pitches that are generally within a fifth, so that "little more than a third (the lower third) of the vocal compass comes into play, while in singing, the middle and upper parts are chiefly used. A tenor with a vocal compass of  C to B, will speak principally upon the part of the voice indicated by the crotchets, C to A, and most voices will end their phrases, when not interrogative, with a drop to the lowest sound that the vocal organ will produce, a sound lower in most cases than would be attempted as a note, basses and contraltos

sometimes excepted. If the tenor were to speak as high as middle c, he would be speaking in a decidedly loud voice, if he spoke naturally."

The third point of distinction between singing and speaking is that in singing the accent is always upon the vowel of the syllable; while in speaking, if the syllable be a short one, the accent falls upon the concluding consonant. Hence when a short syllable is *sung*, it must be lengthened out, and ceases in fact to be short.

A similar though broader distinction is that in song the time is regular and measured, while in speech it is irregular and variable. Although our general rate of utterance, in speech, may be medium, rapid, or slow, and thus somewhat regular, yet the time given to each of the clauses and words is not limited by a rhythmic beat, but is dictated by the meaning, or the form of the word, or by our feelings, or our intention to emphasize. In singing the necessities of melody themselves fix the relative rate of utterance. Words naturally unsuited for being sustained, may have to be prolonged on a long note, and words naturally incapa-

ble of being shortened, may have to be passed over with a short note.

There is a fifth difference, between speech and song. It is the difference that explains the reason why not all good poetry is good song. Many fine and expressive words contain sounds that are not good musical tone at all, but have in them slight beats and dissonances. These either produce hums, murmurs, buzzes, and hisses, or they bring about absolute breaks or silences. Such sounds cannot therefore be sung. If they were, the singable sounds would be separated by noises or pauses. Yet these sounds are invaluable in speech.

There is, finally, a difference in the *quality* of tone with which the same words are rendered in speech and in song. Speaking is not wholly musical even in the vowels. Singing should be wholly musical in the vowels, while "the consonants, or unmusical parts, which cannot be dispensed with, should be reduced to a minimum without being extinguished." As the vowels are not equally well adapted for all pitches, even they must be modified when they are to be uttered in song.

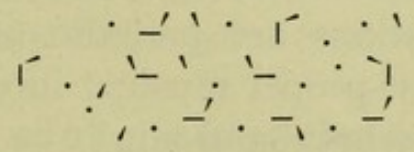
The chant bears resemblance to speech on

the one side, and to song on the other. It resembles song in being at sustained pitch ; it resembles speech in the monotony of its levels. In ancient days the great orators appear to have chanted their speeches. A slave with a pitch pipe stood behind Cicero to keep his voice true to the desired pitch.

The difference between the various modes of utterance may be seen graphically. There are analogies between tone and form. We may represent a simple tone by the straight line, and noise by a confused multitude of dots. Both the extension of the line and the vibration of the tone are apprehended in consciousness as simple, continuous and even. But both the confused multitude of dots and the interference of the confused vibrations of a noise, interrupt the consciousness. Further, if we cut up a continuous tonal stream into smaller periodic vibrations, thus : la, si, do, do, do, do, re ; we have intonation, and may represent it by similarly cutting up the straight line into periodic lengths. If several of these periodic lengths are not of the same pitch, but differ by regular musical intervals, we may have the chant. If these periodic vibrations, musical in themselves, were sounded together with many

other periodic vibrations, also musical in themselves, but not differing by proper musical intervals, the result would be discord,

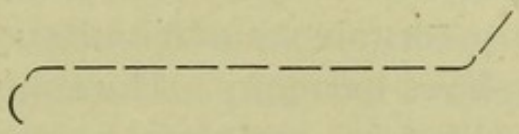
NOISE:



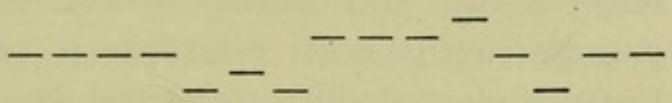
TONE:



INTONATION:

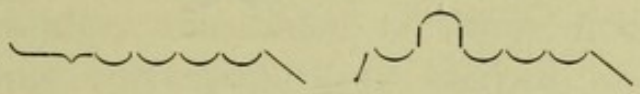


CHANT:

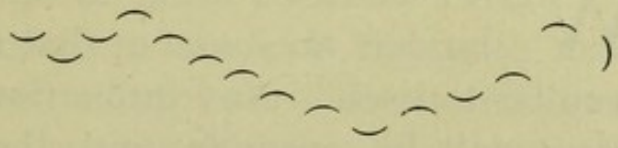


DISCORD:

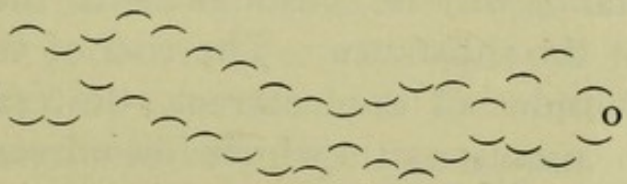
SPEECH:



MELODY:



HARMONY:



and would be represented by a number of regular lines, beautiful in themselves, but mixed and tangled in a mass. If the little

periodic vibrations were themselves gliding in pitch and irregular in rate of utterance, and neither very musical nor very great in the intervals between them, we have speech. If the vibrations are periodic and succeed each other at proper musical intervals, they constitute melody, and might be represented by a curve. Where there is a double, triple, or quadruple set of simultaneous vibrations, we have harmony. Harmony would be represented by undulating curves, flowing on symmetrically with reference to each other, but not necessarily in parallel directions.

**Timbre of the Speaker's Instrument.**

WHAT causes a thing to be itself, also renders *the sound* of that thing to be peculiar to itself. Any intonation of a substance will be consonant with the character of the substance. The roar of the sea, the thunder of the cataract, the crash of the whirlwind mirrors the character of each. Just as silver sounds silvery, and brass brazen; as the lion roars, the bull bellows, the dove coos, the raven croaks, the owl hoots, the

hyena moans, the swine grunts, the birds warble, so the human voice has its own distinctive ring. And this ring is as superior to the intonations of brutes, as human nature and character exceed that of the animal.

Even among human beings, differences of class and character are marked by differences of voice. Barbarians are more given to guttural sounds than are the civilized races. Thus "Indians talk more down the throat than white men." "Coarse-grained and powerful animal organizations have a coarse, harsh and grating voice, while as persons become refined and elevated mentally, the tones of their voice will become correspondingly refined and perfected."*

Indistinct tones are not likely to mark clear minds. Sharp, shrill intonations may characterize people of intense feelings, and "equal sharpness of anger and kindness, as is exemplified by every scold in the world." So a smooth tone may signify evenness of disposition, while intellectual, moral, ani-

* We little realize how much we infer from a voice. A stranger who simply says "yes" or "no," may reveal to other minds much of his character and mentality, by its sound.

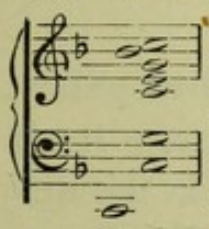
mal, selfish, benignant, mirthful, devout, and love peculiarities have their recognizable intonations.

And, further, there is something in every mature voice in the world, to distinguish it from all the rest. As surely as we can tell the thin lively cutting of the violin, the solemn majesty of the open diapason pipe, the sweet serenity of the flute, the dreamy plaintiveness of the zither, the fragile accents of the grieving oboe, in a strain of music that comes floating across the darkness to our ear, so surely can we tell each human voice we know, from all the others. Even the sheep 'know the shepherd's voice.'

This timbre, or personal peculiarity in the quality of the voice, is a direct consequence of personal peculiarity in physical structure, each person's larynx being as variable in size, shape, and muscular structure, as is—say—his nose. And the other parts concerned in the production of voice, which give each individual voice its leading peculiarities, are even more variable. So the leading peculiarities of a voice, coming from one or two over-

tones* that predominate in every tone uttered, have their origin in the particular form of each individual's mouth, with its attendant peculiarities of palate, uvula, tongue, teeth, cheeks, lips, and of the larynx, the epiglottis, nasal passages, echoing caves in the skull, and resounding of the inflated structures in the chest. It is partly the conformation, partly the quality of the fleshy, and cartilaginous structures that determines the timbre. The epiglottis is said by Garcia, an eminent teacher of music,

* Every tone that comes to our consciousness as a single tone, is really composed of a fundamental tone, and a whole series of partial tones besides. These are named the *harmonics* or *overtones* of the tone, and are arranged in a certain order above the first or fundamental tone, which is generally the strongest. Strike strongly the low contra C on a pianoforte and press the pedal at the same time. Then silence the string of the struck note with the finger, and you will distinguish the following overtones:



"The fullest, softest, and most beautiful timbre is produced when the fundamental tone and the overtones so sound that both are perceived together, the former most strongly, while the latter are heard more and more faintly in the intervals of the major chord with the minor seventh, so that with the fundamental tone still further sound seven overtones. If the higher harmonic overtones grow stronger and even overpower the fundamental tone, the sound grows shrill, but when the discordant overtones lying close together, higher than the tones just named, overpower the fundamental tone, the timbre becomes sharp and disagreeable. In bass voices which use too great an amount of breath, the overtones up to the sixteenth are sometimes heard, which gives such voices a harsh and disagreeable timbre."—"The Voice in Speaking."—SEILER, p. 21.

born in Madrid in 1805, and professor in Paris and London, to play a very important part. He says that every time the epiglottis lowers itself and nearly closes the orifice of the larynx, the voice gains in brilliancy, and when, on the other hand, it is drawn up, the voice immediately becomes veiled.

Sex.

The most obvious and universal distinction in the timbre of the human voice is that caused by difference *in sex*. In men the larynx is about one-third larger than it is in women, and the vocal cords of the former are correspondingly elongated. The vocal cords of a soprano are not nearly so long and thick as those of the bass. One striking effect of this elongation is the lowering of the pitch of the male voice and its increase in power.

But the physical and mental divergency between man and woman impresses itself upon the voice, entirely apart from the differences in pitch or power. Whether tenor or bass, and strong or feeble, whether alto or soprano, we recognize in them the difference in sex. There is an occasional anomaly. We sometimes say of a man "he has a woman's voice." And frequently the prevail-

ing manliness or womanliness in the spiritual nature of one who is of the opposite sex, greatly influences the voice. But this is the exception. In listening to the Wagnerian singers, the manly depth, volume and nobility of Herr Scaria's bass was impressive. But the tenor or rather baritone of Herr Winkelmann was not any the less manly. Moreover, it was imbued just as thoroughly with the full, sonorous, distinctively masculine timbre in its high as in its low register. And the tones of Materna were not less distinctively feminine because of her full, fresh and dramatically powerful soprano. It is so, too, with Lilli Lehmann's voice. Although so much richer and warmer than the bird-like tones of Patti, it is not therefore the less feminine.

The next striking characteristic, affecting the timbre of a voice, is age in the owner. The larynx of a newly-born babe is about one-third the size of the larynx of a woman. It grows rapidly up to the third year, less rapidly from the third to the sixth year, and from this time on to the thirteenth or fourteenth year there is apparently little change in its size or pitch, though it en-

Age.

larges its compass. We instantly recognize the voices of children. The soprano of the boys' choir has a peculiarity about it all its own. It is said to be possible by careful training to arrest the development of the larynx in youth, so that an adult male will still be able to sing the soprano parts sometimes used in cathedral choirs. It is well known that artificial sopranos retain the voices of childhood.

Ordinarily a great change occurs in the voice at the dawn of manhood. The larynx grows rapidly, for a period of from six months to several years, nearly doubling in size, and the voice of a boy 'breaks' in consequence of the lengthening of the cords, generally falling an octave in pitch. A similar change, but very much less in amount occurs at the same period in the female voice. But in girls the larynx increases more in height than in depth and width, and consequently the even outlines of the shield are not so much disturbed. In boys the larynx grows more in depth and width, roughening the outlines of the shield, and adding to the length of the cords, and thus lowering the vocal tones.

In old age the voice again betrays its mas-

ter. It generally becomes less soft and full, and is sometimes 'cracked.' The range is diminished by the gradual weakening or total disappearance of the upper tones of the register, and the cavities changing, the overtones sometimes become discordant. There is also a great loss of elasticity. This is caused by ossification first in the two, and much later in the three cartilages of the larynx. Shakespeare gives us the picture in the last of his seven ages of man :

> "His big manly voice,
> Turning again toward childlike treble, pipes
> And whistles in his sound."

Yet age may conquer this tendency to deterioration. Regular practice and careful living will preserve the voice, as well as any other organ. Just the other day a leading editorial in a great newspaper commented on the fact that Patti after twenty years of vocal supremacy, is still our greatest singer to-day. Pasta is said to have preserved a wonderful power of *messa voce* in private singing when nearly sixty. Braham, the possessor of a marvelous voice and great power as a singer, still sang in private at the age of seventy, giving out notes from his

big chest with immense power. Henry Ward Beecher's voice was finely preserved up to his death, at seventy-four. Matteuchi, when past his eightieth year, sang in church on Sundays with such freshness, that his voice was taken to be that of a man still in the vigor of youth. John Quincy Adams, who was the best public reader of the Bible of his day, even after his originally fine voice seemed much broken by age and became a cracked and disobedient organ, achieved wonders with it in public speaking.

The first special characteristic of timbre is that it may be greatly a matter of *inheritance*, both racial, linguistic, climatic, and family inheritance. Everybody recognizes the thin Saxon tones of the North German, and the heavy thick Swabian tones of the South German. There is an observable difference in vocal tone between the typical Northerner and Southerner in the United States. The voice of the Frenchman, the Scandinavian or Russian can frequently be distinguished by its national timbre. We have already alluded to the harsh consonantal development of the Eng-

Inheritance.

lish as over against the sonorous euphony of the Italian tongue.

Timbre depends somewhat upon climate. "Italy owes much of her fame as the cradle of artistic song and 'The Lord's own Conservatory,' to climatic and linguistic advantages. Thanks to the mild climate, men and women can spend most of their time in the open air, and their voices are not liable to be ruined by constantly passing from a dry, overheated room into the raw and chilly air of the streets. The Italians are a plump race, with well-developed muscles, and their vocal chords share in the general muscular health and development; so that the average voice in Italy has a much wider compass than in most other countries; and an unctuous ease of execution is readily acquired." It has been supposed that the voice is higher in the South than the North. Thus the majority of French tenors have been said to come from the departments which border on the Mediterraneum or the Pyranees, and the basses on the other hand from the North. Whether there is truth in this statement we cannot say.

The influence of climate, through personality, upon the voice, is somewhat similar to

the influences of climate, through the personality of the composer, upon the tones of melody. In warm climates we may expect the voice to be expressive of languor and love, of sweet and tender melancholy. In cold climates we may look for notes of storm, and ruggedness and battle and conquest. In temperate climes, there should be life and grace. The Frenchman's tones should be short, piquant, airy and gay. The German's, broad, slow, reverential. The Italian's, voluptuous and melodic. The Englishman's, positive, stubborn, formal. "His melodies are as passionate and exciting as his steam engines, cheerful as his own dark leaden sky, clear and flowing as the waters of the Thames. When he sings not a smile ever graces his lips, not the slightest contraction disturbs the fixedness of his countenance."

Voice clang may be inherited. But it seems to be frequently an accompaniment of physical type. "In general, sopranos and tenors are blonde, while the contraltos and basses are brown. Tenors are thin, basses are fat. The voice is grave in men of seriousness and intelligence." This amusing

statement is quoted by Brown and Behnke* in ridicule, and they add: "It is possible that the capacity of the chest, the structure of the whole body, or even as imagined by some, the complexion, may have something to do with the kind of voice a person possesses, but we have not as yet any knowledge with regard to such influences, and they consequently remain for the present a matter of speculation."

Yet I think it may be said that a relationship between the individual's physical type and his vocal timbre is frequently felt. We unconsciously expect, and have learned to look for a certain kind of voice in certain types of people, and are more or less startled when tones and type fail to correspond. In the physical type of a man like Luther, for instance, we would expect to find a voice confirming Melanchton's impression that "each of his words was a thunderbolt." And even such a scientific observer as Sir Morell Mackenzie admits that a certain sharp metallic clearness of articulation is often found in individuals of ruddy complexion, light yellow hair, and hard blue eyes, while rich, mellow tones, with a tend-

**Physical Type.**

* "Voice, Song and Speech."

dency to *portamento* in ordinary speech, are often associated with black hair and florid face.

Again, timbre may be a resultant not chiefly of physical type, but of mental and spiritual type and temperament. A frequently recurring temporary *quality* of tone, infused into speech by the direct and mysterious personality behind the voice, may become the habitual physical characteristic, and thus modify the person's vocal timbre. Thus the "delicate, beautiful, almost fleshless form of St. Bernard, worn almost to transparency," was so affected by the fire of the soul within, that his voice "quivered like a harpstring or rang like a trumpet" under the influence of the spiritual emotion. There are voices that appeal, voices that melt, and voices that electrify. Gladness, sadness, confidence, shrinking, boisterousness, harshness, coarseness, peevishness, ostentation, and higher virtues and lower vices leave a more and more permanent impression not only upon the face, but upon the voice. And as they affect the lines and features of the one, so they tend to modify the timbre of the other. Like the

Mental Temperament.

face, the voice betrays the nature and disposition, and even indicates what is the range of the speaker's mind. The order of the speaker's intellect, especially,—whether chastened by cold unimpassioned reasoning or enriched by fervid imagination,—and the lack or depth of emotional fervor, will in time probably leave its stamp on the timbre of the voice. Thus the voice of Emerson, "agreeable, flexible and varied, with power unexpected from a man of his slender chest," came to be so fully representative of his thought that Mr. Alcott said, "His poems and essays were not rightly published *until he read them.*"

Great suffering may leave its traces in the voice, long after the suffering has left the soul. That temporary piercing power which the imprisoned spirit, locked within the walls of the body, sometimes involuntarily gives to the tones of the voice during the access of a great agony; that intense vitality, that living force, which "tells of some inward anguish or conflict of which the language itself gives no expression," may leave its peculiar ring behind it in the speaker's ordinary and regular use of voice, or may make itself to be heard whenever an image

or suggestion of suffering passes over the speaker's mind.

Individual Personality.

And after all, timbre is the distinctive blossoming of the individual personality. There are no two faces alike. Still less are there two voices alike. It is this variety that enriches speech and song, as the peculiar timbre of harps, flutes and horns enriches orchestral effects. These contrasts of individual tone-timbre heighten the charm of daily intercourse. A man's vocal peculiarities in ordinary speech, if they be not extreme or glaring, bring his individuality home to us. A public speaker's or concert singer's peculiar personal ring is even more intrusive, and more admired or detested.

The voice of the great Mario, "rich as Devonshire cream, with an unusual freedom from the tremolo, and a fine manly delivery," left a deeply distinctive impression on all who heard it. The same was the case with the individual ring of the *tenori de forza*, Duprez, Tamberlik, and Wachtel. It is so with the basso Lablache. It was so with the delicious quality of the pure high tenor of Sims Reeves. Those tones "vibrat-

ing and equal throughout" must have been readily recognizable. And when, at the Crystal Palace Handel Festival, in 1857, he sang "The Enemy Said" from "Israel in Egypt," with "such remarkable power, fire and volume of voice, breadth of style and evenness of vocalization, that he electrified his hearers," the individuality of his voice scored its greatest triumph.

The equal-toned and marvelously flexible soprano of Sontag (died in 1854) is another example of individually distinguishable timbre. It has been described as follows: "In the upper octave from middle C it rang deliciously like a silver bell." One was struck by "the limpidity of her chromatic gamuts and the brilliancy of her trill which sparkles like rubies on velvet ground. Each note of those long-descending spirals stood out as if it had been strung isolatedly, and attached itself to the following note by an imperceptible, and delicate solder."

We are, further, told of the pearly, light and fluid vocalization of Persiani, distinguishable from the brilliancy and pomp of Pisaroni, and from the always united voice of Alboni, vibrating without effort, and of which each note "opened like a rosebud."

Then, there was Jenny Lind's soprano of sweetness, compass, power and purity, in spite of the slight veil upon the middle and lower part of the voice, which "was only sufficient to give it substance." The richness and clearness of her high notes, the remarkable ease with which she rose over difficulties, her "faculty of working up to a climax with a minimum of apparent effort, and a maximum of effect," her floods of vocalization; "roulades, quickly reiterated notes, trills, in such rapid succession and for such a length of time, that it was difficult to imagine where the strength came from," are still remembered.

The fine, peculiarly earnest voice of Nilsson, and the light, high, facile, pure soprano of Patti, are recognizable in their individuality of timbre. So are those of Madame Albani and Madame Sembrich. Of Patti, when she was heard for the first time in New York, a critic wrote, "Her voice has a natural sensuous charm like a Cremona violin, which it is a pleasure to listen to, irrespective of what she happens to be singing. It is a pleasure, too, to hear under what perfect control she has it, how, without changing the quality of the sound, she

passes from a high to a low note, from piano to forte, gradually or suddenly, and all without the least sense of effort. Indeed her notes are as spontaneous and natural as those of a nightingale, and this, combined with their natural sweetness and purity, constitutes their great charm." A few months later, the same critic, thought the charm was, "Almost as purely sensuous as the beauty of a dewdrop or a diamond reflecting the prismatic colors of sunlight." Patti has been pronounced the most perfect vocalist of all times.*

Timbre is also, to some extent, a matter of general culture, and of special training. The purifying, polishing and developing power of a refined social and family life have their effects upon the voice, and the special study and exercise of the instrument, properly conducted, will not merely ennoble its quality, but probably somewhat modify its timbre. "In almost every instance," say Brown and Behnke, "a voice which has no inherent beauty, may by correct training, become attractive and pleasant, and obtain clearness, smoothness, and

**Culture and Training.**

* By Herr Niemann.

commanding resonance." A teacher of the vocal art tells us he has often noticed a great change in a voice after careful physical cultivation.

In the well-known case of Demosthenes, not only was his constitution delicate, and his breath short, but his voice was stammering and feeble. The great singer Pasta was endowed by nature with a harsh voice, but by working "with a prodigious determination," she reduced it to obedience. Another conspicuous example of "the victory of art over nature was Malibran's sister Pauline, a woman of great genius with a defective voice, who became a worthy representative of the great Garcia family."

But after all these possibilities of self-modification have been admitted, it must still be said that timbre is chiefly a matter of personality and hereditary endowment, and that neither mental, spiritual nor physical cultivation can change the fundamental characteristics, nor neglect and dissipation entirely destroy them. John C. Calhoun may by personal culture have been able to refine and give added elegance, strength and tone to the "bell-like sweetness and resonance" of his voice; but he never could

have changed it into the full, rich, clear, voice of Henry Clay, which was "as inspiring as a trumpet, and so penetrating that in the ordinary tones of conversation it could be heard further than the thick, vocal bray of some of his rivals." Nor could the voice of a Clay ever have transmuted itself into that of a Webster, and have uttered those "low, deep, musical, metallic tones, surcharged with intensity and power," and expanding with grandeur of volume in the climax of emphasis.

It sometimes, indeed, happens that a massive intellectual and physical presence, is accompanied by a thin, shrill or piping voice. But that this is not what we ordinarily expect, is amply shown by our feeling of disappointment and our sense of the incongruity of the case. Dr. Johnson growled, Carlyle thundered, Coleridge piped. The breadth of chest and strongly developed pugilistic qualities of John Angell James and his powerfully supporting physical accessories in speaking, would lead us to expect a voice to correspond to its immediate source and environment. In the case of Webster the power of personality and the power of utterance were in perfect correspondence. Oliver

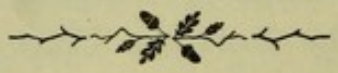
Dyer, who as a reporter in the Senate frequently heard Webster, in a recent work on "Great Senators of the United States Forty Years Ago," says: "When one heard him speak, he found that Webster's voice was just exactly the kind of voice that such a looking man ought to have. It was deep, resonant, mellow, sweet, with a thunder roll in it which, when let out to its full power, was awe inspiring. In ordinary speech its magnificent bass notes rolled forth like the rich tones of a deep-voiced organ; but when he chose to do so, he could elevate his voice in ringing, clarion, tenor tones of thrilling power. He also had a faculty of magnifying a word into such prodigious volume and force that it would drop from his lips as a great boulder might drop through the ceiling, and jar the Senate chamber like a clap of thunder."

There is a very impressive and awe-inspiring power in the combination of physical and vocal strength. Nathan Shepherd in his "Before an Audience" describes Chancellor Thurlow as rushing "like Achilles into the field," and dealing destruction around him "more by the strength of his arm, the deep tones of his voice, and the

lightning of his eye than by any peculiarity of genius." Wieldly strength of person and tone, in combination with even a disagreeable eccentricity of vocal timbre, may triumph over the taste of the auditor. It is thus with Dr. Talmage, whose voice, though not quite "the horrible blare of a twisted, dented, smashed big tin trumpet," as the description goes, is certainly very far from being pleasantly musical.

George B. Wendling, the lawyer and public lecturer from Illinois, one of the most effective popular opponents Robert Ingersoll has had on the platform, and a match for Ingersoll in physical prowess, in commanding countenance, in keenness of sarcasm, brilliance and polish of rhetoric and magnificence of sentence-structure, and more than a match in awful earnestness, is massive in head and chest, full-blooded in face and throat, and resolute in chin. We naturally expect such a combatant to be a thunderer. We are disappointed at the first words. They are pleasantly spoken, with the upper registers of the voice, in self-poised, musical, almost effeminate tone. But the easy and decided drop into deepest bass at the end of the sentence, almost startles the listener, and im-

mediately and confidently suggests the still unused reserves of the impressively deep chest registers that later on will be brought into play in the herculanean and prolonged ascents into sustained climax.



TIMBRE is an attribute of *a* voice, but Quality is an attribute of voice. Quality is not clang. Clang, or timbre, is kind of tone defined with reference to the individual essence of the speaker. But Quality is kind of tone defined with reference to the various properties of tone. It is, secondly, kind of tone defined with reference to some standard of perfection of any one of the various properties of tone. It is, finally, kind of tone defined with reference to the state of mind naturally revealed by any one of these various properties.

QUALITY.

But, the Quality of tone is itself further *colored* or *shaded* under the varying and transitory influence of emotion or other psychic affection. So color is a quality of a quality. It is kind of tone, defined with reference to the kind of emotion or psychic energy affecting the tone. When the mind

steps in to use the properties, qualities, degrees, and colors of tone, we have what is called the *modulation* of the voice. Modulation is the adapting and grading of kinds of tone to produce a certain intended effect. It is the intentional coloration or shading of the voice with conscious purpose.

In speaking of Quality *with reference to the various properties of tone*, we say a voice is rich, full, deep, piercing, sweet, rough, smooth, ringing, bird-like, flute-like, trumpet-like, manly, womanly, child-like. *As a reflection of the apparent natural mental state of the speaker*, a voice is pathetic, solemn, tranquil, grave, serious, animated, gay, playful, mirthful, rollicking, melancholy, sublime, courageous, scornful, defiant, threatening, despairing, awe-stricken, alarmed, horrified, revengeful, kind, tender, hopeful, truthful. But these qualities of tone, which we naturally think to be significant in reference to the mental state of the speaker, may often have no such significance at all. The speaker using these tones has caught them up by imitation, perhaps dating from childhood, and adopted them

**1. As to tone.**

**As to state of mind revealed.**

in his utterance, although his prevailing state of mind is not at all what they would seem to indicate. This is the result of the imitative tendency of the human mind to act without perceptible motive, and simply because others do the same thing in the same way. It may have been the fashion to speak that way in his locality or household. Possibly they were the favorite tones of his father or minister, or his school-teacher, or his companion, and from sheer unconscious imitation, or from admiration, he has copied that quality of voice which is the result of an entirely different mental habitude. This mimicry of another's tones is responsible for much of the grotesque and inappropriate expression of thought in sound. "Some persons use a womanish, squeaking tone; some a sing-song canting tone; some a high, swelling, theatrical tone, laying too much emphasis on every sentence; some have an awful, solemn tone; others an odd, whimsical, whining one, not to be expressed in words."

2. As to Purity. *Speaking of Quality with reference to some standard of perfection*, we say, "He has a *pure* voice." That is, his

utterance and tones result from the harmonious and perfect action of all the vocal parts. The whole apparatus of voice unites in one consentaneous act, "combining in one perfect sphere of sound, the depth of effect produced by the resonance of the chest; the force and firmness imparted by the due compression of the throat; the clear, ringing property, caused by the due proportion of nasal effect, and the softening and sweetening influence of the head and mouth."* The tone comes from the larynx; its resonance comes from either above or beneath; from the chest beneath, or from the pharynx, mouth, and cavities of the head above. If the tone from the larynx be pure, and the resonance from above and beneath be pure, the voice will be pure.

Impure quality arises from the undue or exclusive or imperfect use of one portion of the vocal organs. If for instance the resonance in the chest be not perfect, we will perceive a hollow *pectoral* quality of tone. This quality may be caused by an imperfect habit of breathing, the lungs not being sufficiently filled with air for a full tone; or it may be

* Russel's Orthophony based on Rush's Philosophy of the Human Voice.

due to the feeble action of the abdominal muscles in expelling the breath. In this case the voice will be smothered or muffled as though it were buried within the breast.

Another impure quality of voice is the half whispering or *aspirate* effect, due to a wasteful escape of breath while speaking, and to insufficient inhalation in breathing. "It arises sometimes from organic weakness, or from embarassment, which causes a slight 'rigor' of the organic parts, and consequently allows more breath to escape from the trachea than is converted into sound by the larynx."*

Another impure quality of voice seemingly comes from an obstructed throat. It is called the *guttural* tone, and is due to a wrong pressure of the muscles around the larynx and the root of the tongue. In stout persons, we notice it as a soft, choked sound, as if the voice came from the pharynx instead of the larynx. In slender people, we hear a hard, dry, barking tone, as if the voice originated in the upper part of the throat only, and had no communication with chest or mouth. Then, too, we have the *nasal* quality, which comes from imperfect

* Russel's Rush.

or forcible resonance in the nasal passages, and the thick tone, which is due to an entire obstruction of the nasal passages.

In some persons the quality of voice varies much at different times, even when similar emotions affect the personality. The physical condition may involuntarily affect the vocal quality. Speakers frequently notice that the quality of their voice is different in the morning from what it is in the evening. So a singer, when refusing to sing, will decline, alleging that "I have a cold," or "I am hoarse to night," when as a matter of fact neither a cold nor hoarseness, but some other unexplainable physical cause has acted upon the quality of the voice. "It is this element of accident and uncertainty that lowers the value of many German singers. Herr Niemann, for instance, has moments and, indeed, whole evenings—when his voice, seemingly rejuvenated, not only rises to sublime heights of dramatic passion, but possesses rare sensuous beauty; while on other occasions the sound of his voice is almost unbearable."

A simple pure quality of tone is a very soft, pleasant sound, free from all roughness, but wanting in power, and dull at low

pitches. A musical quality of tone is a pure tone rendered rich, full, and splendid by the accompanying of harmonious resonance. An orotund quality is a dignified expansion of pure quality, adding to purity the power of high mental purpose and hearty physical condition, and manifesting itself in volume, solidity and commanding resonance.

From what has been said, it will be seen that purity of tone depends greatly upon the harmonics* which come from the head, throat and chest, acting as resonators. The number of harmonics, their relative position, blending power, and their relative degree of loudness, determine the quality. A musical tone is pure quality blended with a moderately loud series of the upper harmonics, to about the sixth partial. If only the uneven partials are present, the quality is hollow. If too many of such upper partials are present, it is nasal. If partials higher than the sixth or seventh are distinctly felt, the quality is cutting and rough. If the original tone is not strong enough, as over against the upper partials, the quality is poor or empty. If the latter are entirely absent, the tone lacks character and expres-

*See page 93, Foot Note on Overtones.

sion. If they are properly predominated over by the original tone, the quality is rich and full. If the original tone itself is mixed or compound, one or more of its constituents will be strengthened by the upper resonator-cavities, and the fundamental tone itself may be obscured by the strength of the reinforcement which a single partial has thus secured. The ways of beginning and ending a tone and the noises of articulation have also much to do with the total effect of quality.

**3. As to Color.**

We have dealt with quality of voice, in explaining its various tonal properties, and in comparing various kinds of voice with the standard of purity. We have still to consider that additional coloring or shading of quality which takes place under the influence of emotion; and that modulation or intentional gradation of various qualities, which the speaker uses in aiming to express his feelings and thought, and thus produces a certain desired effect.

The color of the voice may be the result of the direct and involuntary action of the soul and spirit upon the body. As the soul when it is agitated by some violent emotion,

awakens a nervous impulse, "that rushes through the avenues of the body, and becomes suddenly the controlling agency of the whole physical system, causing the eye to flash," and the muscles of the face to write a meaning there, so the muscular system of the vocal organ becomes peculiarly and wonderfully affected, and makes a revelation of what is going on within. Indeed, the ever varying phases of vocal quality, are a spiritual barometer, indicating the atmospheric conditions within. Our tones reveal the general state of the soul more unmistakably than our words. The baseness or the nobility of passion finds a tell-tale there. Steadiness of purpose, glow of earnestness, firmness of faith, outreach of sympathy, a will to conquer, calmness of self-poise, freedom of unfettered action, are manifested with remarkable clearness in the coloring of vocal tone.

The variations in pitch and force form an elementary alphabet of expression which can be read at once by any human being. When the soul is indifferent, monotonous, doubtful, melancholy, sad, it expresses itself in speech by small intervals of sound. In expressing occupation, pleasure and desire, the

soul uses moderate intervals. The more ardent and intense the feeling, the more extreme the intervals used. Just as melancholy sentiments depress and diminish vitality, so the expression of them is by diminished intervals and compass. Just as earnest desires, strong passions or pleasant and happy feelings stimulate great and active vitality, so the expression of them is by great intervals and variations in compass. "These expressions, by giving an outlet to the excess of vitality, furnish one of the best means for calming violent passions. In music there is a similar correspondence between the use of intervals and conditions of feeling." Thus "the major third is generally employed in interrogations and appeals, and the appellative character of that interval becomes more and more marked and impressive in the fourth descending, while the fourth ascending denotes affirmation, decision, and command. The diminished and augmented fifths express the feelings from prayer to violent desire and menace. The sixth is the interval of passion ; it is the symbol of a very accentuated emotion, and is inevitably met where love is declined. A semitone higher conveys the idea of something painful, which

is resolved into a real expression of grief in the cry of the diminished seventh, the symbol of an excess of suffering. There are in effect, no two ways of saying the same thing in music."

The soul under the influence of caution, secrecy, fear or surprise, will use the whisper or aspirate quality. If it feel remorse, horror, dread, or deep solemnity, it will express itself by the pectoral quality. Dislike, ill-humor, rage and the ferocity of revenge will come out in a guttural quality. The harsh, discordant quality of an enraged soul, comes from a compressed throat. The steely, bitter tone of hatred is due to the rigidity of the vocal cords; the shriek of terror, to their unnatural tension; the expression of deep solemnity to their relaxation. The genial emotions, serenity, love, tenderness, pity, are expressed in pure quality; but the intense emotions, are aspirate in their vocal expressions. Thus intense earnestness or ardor, intense joy or grief, love or devotion, profound awe are so. Thus, too, gloom, despair and deep-seated indignation, when intensely expressed, add aspiration to the pectoral resonance in the chest. And thus the malignant emotions, in their harsh

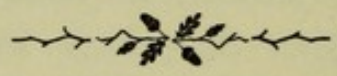
and sometimes even fiend-like utterance, malice, revenge, choking anger; and similarly, in less measure, aversion, disgust displeasure, impatience, dissatisfaction, discontent tip the guttural quality of their tones with aspiration.

But the yell of rage and fury, the sudden outburst of ecstatic joy or frantic grief, the alarm of fire, the short and sharp cry of terror or of warning, the shout of high-wrought courage, are explosive and involuntary bursts of loud and pure tone. This loud and clear outburst of the human voice is "one of the most impressive in its effect. By a law of our constitution it acts with an instantaneous shock on the sympathetic nerve, and rouses the sensibility of the whole frame; it summons to instant action all the senses; and in the thrill which it sends from nerve to brain, we feel its awakening and inciting power over the mind. With the rapidity of lightning it penetrates every faculty and sets it instinctively on the alert."

The orotund quality denoting sublime thought and lofty sentiment; the pure quality resulting from self-balanced repose and serenity of body and mind, the deep monotone of determination, the quivering tremolo

of passion, the soft note of love, the slow minor cadence of sorrow, the staccato high-keyed exclamations of pleasure are very expressive, and may be instantly interpreted by even the unlettered barbarian.

The power of great thought and emotion to reveal itself through our personality and color our expression is finely illustrated in the case of Webster. "When his heart was deeply moved by some great theme, and his affections were enlisted in his cause, and his intellect was ablaze with the truths he was developing, his eloquence would sometimes rise to dizzying heights and be illuminated with bursts of dazzling splendor."



QUALITY is either permanent or temporary. Modulation is necessarily temporary; it is essentially *a changing* of the voice. Quality is an involuntary affection of the voice. Modulation is a voluntary one, for the purpose of expressing mental or emotional states by determinative act of the will. It is the adaptation of speech to sentiment. It is the spirit wonderfully wedding sound to sense.

MODULATION.

Aristotle in his rhetoric, which is, according to Prof. Jebb, incomparably the most scientific work which exists on the subject, defines the art of delivery as the management of the voice. "It is the art," says he, "of knowing how to use the voice for the expression of each feeling, of knowing when it should be loud, low, or moderate, of managing its pitch,—shrill, deep, or middle—and of adapting the cadences to the theme." This is modulation. It seizes on quality, force, pitch, time, rhythm and accent, and uses them for its purposes. It has the task of properly charging the word and the phrase with meaning, emphasis and feeling. There is a difference between a beautiful voice and an impressive voice. The difference is in modulation. It is akin to the difference which a musical critic points out between the German and Italian schools of singing. He says, namely, "An Italian adores singing for its own sake, a German as a means of definite emotional expression."

Spoken language may be said to bear three distinct relations to the signification of the words which enter into it.

"FIRST.—A sentiment may be so uttered as to weaken or pervert the simple meaning

of the words. Wanting in the necessary force, emphasis misplaced, or modulation disregarded, the words, though possessing volumes of thought, may be rendered almost void of meaning.

"SECOND.—The sentiment may be so spoken as to leave its plain meaning, unaffected, neither adding to nor taking from the mere signification of the words. The listener, hearing, and being familiar with the words, obtains an intellectual knowledge of the thought expressed. He is *impressed* with the words, only to the degree that he is *interested* in the thought. There is nothing in the presentation to *attract* his attention, or that will awaken interest within him. Had he seen the words in the skeleton form of *written* language, the effect would have been the same. They have been presented to his *sense* alone.

"THIRD.—The same sentiment may be spoken so that it shall not only express the idea indicated, but that it shall impress that idea upon the mind and heart. Under this character of utterance we supplement the form of words with their power, investing the mere passive clay with the life-giving

principle which shall send it forth an active, aggressive influence."

Modulation will express boldness by striking a spirited tone ; invitation or persuasion, by mild, suave swelling of tone ; alarm, by loud tremulous notes undiminished in their intensity ; joy, by a loud sound, firmly and rapidly diminishing. It will indicate exultation by a loud increasing sound with abrupt termination ; and pathos by a simple swell.

It will also draw attention to thought-relationships. It will impress us with the proper importance of each single idea, and its modifications, and will enable us easily and naturally to divine the emphatic trend of the flow of successive ideas. In gliding on, the various component, and subordinated ideas will be indicated audibly, and so distinguished from each other by means of different degrees of force and other varieties of expression, that the principal and culminating idea is brought out into its proper prominence, and the less important ones are proportionately subordinated. Good phrasing is one of the most useful means of indicating the relative importance of ideas contained in a sentence, and their inter-relation.

It is well to keep the same general tone of voice throughout *each* clause, varying the character of the tone with the central thought of the clause; in passing from clause to clause, especially in rising to a climax, great care should be used to indicate their relative values.*

Much study has been given by public speakers to the acquirement of this power. Lord Brougham is said to have bestowed extreme care upon the modulation of his voice, which was one of extraordinary compass and power. Henry Grattan, the Irish statesman and orator, by constant practice "succeeded in overcoming to a remarkable extent his great physical defect, so as to acquire a clear and rounded articulation, and an emphasis in some respects admirably consonant with his meaning." The younger Pitt took similar pains in the modulation of his silvery tones. "His early friends used to talk, long after his death, of the just emphasis and the melodious cadence with which they had heard him recite the incomparable speech of Belial, in Paradise Lost. He had indeed been carefully trained from infancy in the art of managing his voice, a voice naturally

* W. J. Balzell.

clear and deep-toned. His father whose oratory owed no small part of its effect to that art, had been a most skillful and judicious instructor. At a later period the wits of Brookes's, irritated by observing night after night, how powerfully Pitt's sonorous elocution fascinated the rows of country gentlemen, reproached him with having been 'taught by his dad on a stool.'"

Robert Hall's exceptionally pure and melodious voice, though deficient in strength and volume, coming as it did from a broad chest and a frame of powerful build; was capable of being thoroughly interpenetrated by emotion. "One of his most remarkable gifts is said to have been his extemporaneous command of a clear and felicitious vocabulary, which seemed to clothe every shade of his meaning with its appropriate expression, and whose musical cadence formed a not unimportant element in the fascination exercised by his oratory."*

Although Wendell Phillips' smooth, sweet and penetrative voice was narrow in range and thin in the higher register, yet, holding

* The inadequacy of his voice was also compensated for by its great flexibility, which enabled him by the momentum of rapid utterance to obtain all the vocal force necessary to the highest oratorical effects.

it to its middle and lower tones, he modulated it so exquisitely that "every finest shade of thought, each most delicate distinction of expression, was discriminated as he spoke." Carlos Martyn, describing him as an orator, says: "He had a faculty of pouring a world of meaning into those quiet utterances—indignation, wit, sarcasm, suggestion, moral appeal, legal argument, what he would—and all without once raising his voice. It was like Ole Bull's inspired playing on one string; that being more expressive, under his bow, than the whole instrument in any other hands. Connoisseurs have testified that no other speaker, here or in Europe, put such intense feeling into so small a compass of voice, scaling the heights and sounding the depths of oratory in a colloquial tone. In one of his lectures, speaking of a certain locality in Florence, he said: "As I walked the pavement I suddenly came upon this inscription, under my very feet, 'On this spot, 300 years ago, sat Dante:'" It was uttered simply, yet with such an entire change of voice and manner that you saw what he saw, the image of the Tuscan poet who went down to hell."

John Wesley gave some good directions

for modulation, as follows: "If you speak of natural things, use only a clear distinct voice. If you would display the wisdom and power of God therein, do it with a stronger and more solemn accent. The good and honorable actions of men should be described with a full and lofty accent; wicked and infamous acting with a strong and earnest voice, and such a tone as expresses horror and detestation. In congratulating the happy events of life, we speak with a lively and cheerful accent; in relating misfortunes, with a slow and mournful tone. It is absurd to speak in a lofty manner, where the subject is of little concern, or to speak of great and important matters in a low unconcerned and familiar voice.

"Love is shown by a soft, smooth, and melting voice; hate by a sharp and sullen one, joy by a full and flowing one; grief by a dull and languishing tone, fear by a trembling and hesitating voice; anger is shown by a sharp and impetuous tone, taking breath often, and speaking short; compassion requires a soft and submissive voice."

But after all, modulation in speech is not a matter of rules. It is free and untrammeled. It depends neither upon pitch nor

intervals; "but changes with an inexhaustible variety, according to the finest shades of the emotions, from which it directly proceeds and of which it is the immediate expression. For the modulation of speech is created at the very instant at which the vocal sounds need it. And as it is thus created, it thus vanishes forever, leaving upon the mind of the hearer a more or less distinct impression."

Dr. Rush, in his great work, the Philosophy of the Human Voice,—and the elocutionists, teach us how to modulate by sliding the voice on a syllable.* They regard the slide as the crowning power of expression, and tell us how to use the slides. Madame Seiler, on the contrary says: "It is very necessary, for a beautiful manner of speech, that the vocal tones should move in slow intervals, and never, or very rarely change their pitch on the *same syllable.* When emotion is to be expressed, it is, together with the accent and the time, the melodious order of the vocal tones, particularly the manner in which they rise and fall, which is chiefly to be regarded. When the object is merely to address the understanding and

*See page 141.

communicate thought, accentuation is the main thing. All subordinate propositions are stated quickly and lightly, in order to dwell emphatically upon the principal thought and thus to impress it upon the mind of the hearer. . . Modulation comes from a higher and deeper source than the organ of the voice. Let the mind be fully occupied with the thought, or the heart full to overflowing with the emotion that seeks utterance, and the voice may be trusted to take care of itself. To lay down rules for modulation is as idle as to undertake to subject to regulation the features of the face, to teach that the brows must be knit when anger is to be expressed, or the corners of the mouth to be drawn down in the expression of grief. The only rule in regard to such things is stated in the familiar words of the Roman poet,— 'If you wish me to weep, you must weep yourself.' "

The wonderful power of modulation, purely by itself, to affect the soul in the most various ways, is illustrated by the same author. She tells of a little comedy which consisted chiefly of two words, "Come Here." A stage manager requires a young actress to express them with every variety of emotion

from the greatest joy to the deepest sorrow. The author heard Mademoiselle Janauschek uttering these two syllables so as to produce in the hearer one state of feeling after another of the most different and opposite character, with a success not to be attained by the most elaborate and vivid description. It was done simply by varying the vocal tones, and changing the colorings, intonations and *tempi* of those tones.

It is modulation that gives the spoken word an authority and an insinuating property which the written word lacks. Voice is "not merely so much air," says Joubert, "but air modulated and impregnated with life."

The *elements* of modulated speech, are certain gradations of tone color already considered; variations of intensity, glidings of pitch, rates of movement or pulsation, kinds of accentuation, and rhythm.

**Force In Modulation.**

One of the most obvious modifiers of vocal tone to express differences of thought and feeling, is force. We measure a person's own idea of the importance of what he is uttering, by the degree of force he uses in expressing it. The more

one is impressed with a thought, the more will the force of one's personality lend itself unreservedly to its advocacy. And a powerful emotion will take such a hold on the personality, as to affect the heart and lungs, and other involuntary organs of life, and even cause the muscles of the voice to produce sound of their own accord. Such an involuntary loosening up of the fountains of personal force will of course greatly augment or otherwise modify the tones of our speech, unless indeed the force of the emotion is so overpowering that it seems to paralyze our organs, in which case our utterance, becomes choked and struggling, and the voice suppressed and inarticulate.

It is a favorite trick with many public speakers, who feel that they are lacking in the thought or feeling which is the cause of this force, to try to produce the effect without the cause, by *exerting* themselves to put force into their speech. They thus designedly work themselves into excitement, and try to speak in choked tones or to simulate an emotion they ought, but do not feel. The trick is sometimes successful, but will betray its master sooner or later.

The degrees of force range from the sup-

pressed pianissimo, the subdued piano, to the moderately soft; and from the moderately loud or grave, serious or cheerful utterance, to the loud degree of declamation, and the very loud degree of impassioned speech and shouting.

In the application of force to speech, it may be concentrated on a single clause, or phrase, or word, or even syllable or letter. On the other hand it may be distributed and equalized over as many words as possible. Thus some speakers open every syllable almost as abruptly and percussively as if they were about to cough. It is such an application of force that, as Dr. Rush says, "draws the cutting edge of words across the ear, and startles even stupor into attention, —which lessens the fatigue of listening, and outvoices the stir and rustle of an assembly, —and it is the sensibility to this, through a general instinct of the animal ear, which gives authority to the groom and makes the horse submissive to his angry accent." In speech it is used to produce a startling effect. But the speaker who uniformly uses this abrupt stress, gives his audience an uninterrupted series of sound shocks, which become increasingly unpleasant, and do

much to awaken a prejudice against him. He impresses us, as unnecessarily presuming that we are opposing him ; as being opinionated, willful, self-conceited and addicted to violent partizanship ; to unwarranted assumption and dogmatical arrogance. Used in moderation its tones denote "the definiteness and decision of the speaker's intention, the distinctness of his perceptions, and the energy of his will. It addresses in clear, distinct style, the ear and the understanding," and is characteristic of earnest argument, and emphatic or exact communication.

If the force be so applied to the language that there is a gradual augmenting and diminishing of the voice, so as to produce a swell, the effect will be a sublime, solemn or pathetic form of utterance. This gentle, gradual and musical swell in the tone is the gift and charm in many an orator, many a reader of scripture and poetry. Yet, if it be overdone, as it is likely to be, when one falls into the habit of it, the effect is indescribably lifeless, and sometimes sickening.

If the force, instead of being applied abruptly at the beginning, or being spread in a gentle swell over the whole of the word or clause, be abruptly and instantaneously in-

jected at its end, we feel that we are hearing the tone of dogged sullenness, fierce obstinacy, contempt, rebuke, astonishment, peevishness and impatience. This form of force is exemplified in the language of "a child strung to a high pitch of impatience or peevish feeling, and uttering, in the tone of the most violent ill-temper, its appropriate 'I won't,' or 'You shan't!'" Again, the force may be thrown on the first and last part of a sound and the middle part be slighted. Such utterance would express surprise, or mockery, sarcasm, raillery. Again, if every syllable receives a perfectly even application of force, we have the utterance of rapture, triumph, exultation, command, virtuous indignation, high-souled contempt. This form is said to be "one of the most powerful weapons of oratory, as well as one of the most vivid effects of natural feeling. Indiscriminately used, it becomes ineffective, as savoring of the habit and mannerism of the individual. In such circumstances it becomes rant." Finally should the force be applied intermittently, in brief successive jets, we perceive a tremor, or tremulous effect of the voice.

These six ways of applying force to a

syllable have been illustrated as follows, in the use of the word "all." First, the authoritative command, "*Attend* ALL!" with abrupt stress on the sound of a in all. Second, the tone of impatience and displeasure, "I said ALL,—not one or two," with a vanishing stress on the same sound. Third, the reverence of adoration, "Join ALL ye creatures in his praise," with the swelling tone. Fourth, the exclamation of surprise, "What! *All?* did they *all* fail?" with the force thrown on the first and last part of the sound. Fifth, the tone of defiance, "Come one—come ALL," with a perfectly even application of force. Sixth, the tremor of sorrow, "Oh, I have lost you ALL!"

In addition to the use of varying quality and varying force, modulation requires the use of varying pitch. There is *up* and *down* in thought and feeling. Joy and victory are up. Melancholy and awe are down. Exaltation of spirit will produce a tension of the vocal ligaments, and the tone will be high. Depression of spirit, causing the cords to relax, will make the tone to be low. "To respond to these

**Pitch in Modulation.**

qualities of sentiment, the sense must be quick to perceive, and the voice must be capable of prompt and graceful change, either by step or by slide." In the body of a sentence the rise and fall of pitch produces a sort of melody. The changes on the sentence's last three syllables form the cadence. In the body of the sentence exact alternation or measured recurrence of the same pitch are to be avoided. In the case of the cadence, the peculiar closing effect is caused by a gradual descending of these last syllables, especially of the last syllable. It is just here that a pulpit tone frequently arises, by neglecting the proper descent which is called the Triad of the cadence.*

The pitch is not always changed by a separate step. There may be a change of pitch upon the same word. This is the slide. The pitch on a word may be changed upwards or downwards, or both upwards and downwards. Accordingly there is the

* "The common style of cadence, instead of being *spoken*, is usually such as causes it to be *sung*, more or less, by deviating from the melody of the "triad," and, at the same time losing 'radical,' and assuming 'median stress,' accompanied by a half-musical wave or undulation of voice. A clear, distinct, and exact succession of 'radical pitch,' in the form of the triad, would in most cases destroy the false tone, and impart to reading more resemblance than it often possesses to speech or to conversation."

Upward, Downward and Circumflex slide. The slide is of constantly changing degree, according to the intensity of the sentiment or the prominence of the distinction to be marked. It may be through several tones or through a whole octave.

The use of the slide has been illustrated as follows: "There is indeed—" Here the sentence is suddenly broken off, and there is an upward slide of the second. "Did you say *indeed?*" In this inquiry there is an upward rise of the voice through the musical interval of the third. "*Indeed!* can it be?" This adds earnestness and surprise to the inquiry and the voice slides upward through a fifth. If the tone be that of utter amazement, the interval will be a whole octave. Again, if while we were saying, "Death is indeed a solemn mystery," an interruption were to occur after "indeed," there would be a downward slide through the second. "Death is a solemn mystery, *indeed.*" Here then would be a fall of the third. "*Indeed, indeed*, sirs, but this troubles me." Here there is the fall of the fifth. Iago, "Aye, indeed!" Here there is the fall of the octave. If there is a fall of the "seventh," it would be the expression for pathos; if of

the "fourth" and "sixth" it would indicate a physical inability to complete the ordinary intervals, as in the case of inebriety.

So the slide is used on expressive words to indicate the degree of the intensity of the emotion. If we slide downward on a word, the *degree* of our anger, courage, scorn, or impatience will be indicated by the *extent* of the slide, whether through a third, fifth or whole octave. Or, if we slide upward, the degree of our surprise or our curiosity to know, will come out in its use. It does not always indicate emotion. It is frequently used for emphasis, and is addressed to the understanding or judgment.

Positive language, comprising what is laid down and completed, or definitely stated or enjoined, takes the downward slide. Negative language, comprising what is incomplete, indefinite, unfinished, subordinate, takes the rising slide. The slide is also used to distinguish in comparisons, contrasts, and antitheses; to designate a topic, person, or event, in announcing or introducing it; or to create expectation of further expression, for the completion of a thought. There is also a slide which belongs to the

mechanism of a sentence, and indicates the local position of phrases.

The circumflex or double slide is said to be "one of the most impressive in the whole range, of vocal effect. It gives, in its subdued form, a sustained dignity and grandeur to utterance without which the long-drawn sounds of solemnity would sink into monotony and feebleness. Sarcastic and ironical expression cannot be given without it. Close distinctions of sense and meaning lose their point and discrimination when deprived of it. Wit and humor ceases to exist to the ear, if the ambiguous and equivocal, or graphic effect of the wave, is dropped."

"An intelligent and discriminating use of this element is indispensable, however, to its right effect. Adopted too frequently, and expressed too pointedly, it offends the ear; as it implies a want of skill on the part of the reader or speaker, and a want of perception on that of the hearer. It forms, when given in excess, the striking feature in overdone emphasis, or that which seems, by its obtrusiveness, to forestall the judgment of the person who is addressed, and compel his perceptions. It is the usual resort of the author of a pun so poor, that,

without his syllabic and waving enunciation, you could not have surmised its existence."*

Time in Modulation.

Whether a man speaks fast or slow, whether he dwells long on a single word or passes lightly over it, whether he pauses at certain intervals of speaking, and how he pauses, tells us much. It may indicate to us his general nature, his present state of excitableness, his present power of self-control, and his conception of the importance of the sentiment he is uttering. In continued speech a proper variation in the rate of utterance will also indicate his ability to enter into all the changes and shades of the sentiment, and will prevent his speech from losing its freshness to us, and becoming tedious.

The rapidity or slowness of a speaker's utterance is called its "rate." The rate of utterance should not be merely a result of temperament or of an excited condition of the speaker. If he canters away too fast, or if he stumbles along too slow, for his audience, he will find in the one case that

* RUSSEL'S *Orthophony*, to which the author indebted throughout this section.

they are not following him; in the other, that they are becoming very impatient, and feel like 'jogging' him a little. And if he never changes the 'gait' of his voice, but goes on through all varieties of subject and feeling with one uniform measured step, he will find his tones as interesting as the click of a telegraphic instrument, much attended to if there be great business in its message, but entirely neglected if there be no attraction in the thought itself.

Dignified, solemn or important statement requires a slow rate; and he who skims lightly through such statement not merely fails to leave on his hearer a due impression of its weightiness; but causes the latter to feel either that the speaker is inadequate to his present task, or that he cynically or frivolously undervalues the importance of what he is saying. "Habitual rapidity especially if accompanied with indistinctness of enunciation, prevents all deep and impressive effect." On the other hand, habitual slowness, with perhaps a drawling or a hesitating manner conveys the impression of sluggish, feeble and imperfect mental action, or of reprehensible laziness. The man who

is never grave and sedate in his rate, will fail to command respect. The man who is never lively, never playfully light and brisk, never gladly gay and exhilarated, may lead us to suspect that his excessive solemnity is a professional mannerism, assumed and not the natural result of true feeling in him.

In climax, movement should take on an impetuous acceleration. But the impetus should be in proportion to the ascent, so that exhaustion do not come before the top be reached. To ascend is to strive, physically as well as morally. It is to raise one's self to a superior elevation. The more the ascent is steep, the more force is required; the more rapidly our pulses beat, the greater becomes our animation.

A speaker attempting to utter sentiment constitutionally foreign to his own nature, is in danger of manifesting a ludicrous incongruity between what he in his words professes to feel, and what his whole manner shows he is actually feeling. Nowhere does such incongruity come to light more clearly than in the *rate* of vocal utterance. Lord Macaulay, as quoted by Professor Phelps, gives an amusing account of a criticism by

Sheridan upon the style and manner of Mr. Fox and Lord Stormont in the British Parliament. Sheridan had returned one morning from the meeting of Parliament, and a friend asked him for the news of the day. He replied that he had enjoyed a laugh over the speeches of those two men. He said that Lord Stormont began by declaring in a slow, solemn, nasal monotone, that, "when —he—considered—the enormity—and the—unconstitutional—tendency—of the measures—just—proposed, he was—hurried—away in a—torrent—of passion—and a—whirlwind—of im-pet-u-os-i-ty. Mr. Fox he described as rising with a spring to his feet, and beginning, with the rapidity of lightning, thus: "Mr. Speaker, such is the *magnitude* such the *importance* such the vital *interest* of the question that I can but *implore* I can not but *adjure* the House to come to it with the utmost *calmness* the utmost *coolness* the utmost DELIBERATION."

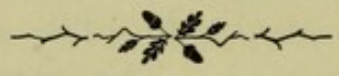
Turning from the rate of a speaker's general utterance to that of single words, we find Time to be an important element here also. Time upon words is called quantity.

There are single words on which we should dwell, and there are others that should be passed over lightly and quickly. To the former class belong words of dignity and strength; to the latter, words of impatience, stubbornness, and sudden action. There are some short syllables that cannot be lengthened under any circumstances; there are others that can be slightly prolonged under an accent; and there are still others whose prolongation under the influence of great emotion, brings about an almost magic expressiveness and force. "Milton in his 'Paradise Lost' affords innumerable examples of the majestic grandeur of long 'quantities' in epic verse; and without the just observance of these the reading of the noblest passages in that poem becomes flat and dry." For a beautiful manner of speech, the vocal tones should be deliberately uttered with plenty of time, while the consonantal sounds should be quick and crisp.

In speaking, it is always necessary, no matter what the rate of utterance, to place silent intervals of time between some of the words. Pauses are flashes of silence that

serve to illuminate the speaker's meaning, from stage to stage, as he goes along. Some of these indicate to the ear, what punctuation marks indicate to the eye, the heads, subdivisions, structure and sense of the thought expressed. The meaning of the speaker will naturally suggest the length and character of these pauses. Some pauses are for emphasis and impressiveness. They are the Rhetorical pauses. Without these it is said that the most solemn passages of Scripture, and the poetry of Milton produce no effect, comparatively, on the mind ; while reading, aided by their "expressive silence," seems to be inspired with an unlimited power over the sympathies of the soul. Yet the danger of their bombastic and exaggerated use, is very great, and is frequently noticed in speakers who have passed through a course of elocutionary training. The Rhetorical Pause gives a peculiar force to the words which precede or follow it and conveys an impression that the idea in the speaker's mind is fresh and new, being just in process of creation. It also indicates present action of the mind, giving to speech the effect of freshness and origin-

ality." Like rate, it varies in its length and character, in accordance with the nature of the emotion it aids to express.



THE life of a word is in its accent. Emphasis may come to a word or syllable through dwelling upon it for a long time, *i. e.* through quantity; or through a pause; but ordinarily it comes through accent. Accent is a special and harder blow struck upon a part of the word. The clear, sharp, unhesitating striking of this blow with just the proper degree of force upon the right syllable of every expressive word marks the intelligence, culture, taste and spirit of the speaker.* Accent, together with rhythm, or the successive flow of accents, quantities

Accent.

* Fine elocution means first an exquisitely close attention to, and intelligence of, the meaning of words, and perfect sympathy with what feeling they describe; but indicated always with reserve. In this reserve, fine reading and speaking differ from "recitation," which gives the statement or sentiment with the explanatory accent and gesture of an actor. In perfectly pure elocution, on the contrary, the accent ought, as a rule, to be much lighter and gentler than the natural or dramatic one, and the force of it wholly independent of gesture or expression of feature. A fine reader should read, a great speaker speak, as a judge delivers his charge; and the test of his power should be to read or speak unseen.—John Ruskin in '*Fors Clavigera*.'

and pauses, is the great point of difficulty to a foreigner in using our language.

As in the case of pauses, there are three kinds of accent, the merely grammatical, relating to the individual word; the rhythmical or melodic, relating to the flow of the language; and the descriptive, relating to the emotion or interest of the speaker using it. In perfect speech the three kinds of accent will reinforce each other and harmonize beautifully. In the utterance of prose the rhythmical accent does not fetter or control the other kinds, as is the case in verse. The degree of our accent like our use of the slide, is very significant. It may convey more meaning than does the word itself. It may substantially reverse the signification of the other. There is a "yes" that says "no," and a "no" that says "yes."

**Rhythm.**

The progressive motion of the voice may be altogether varied and irregular, or it may be quite uniform and measured. Rhythm is a principle of proportion introduced into the flow of speech, in order to give pleasure to the ear. It is produced by a more or less regular or irregular recurrence of quantities, pauses and accents.

The voice has been compared with a moving stream. "When flowing over an uneven and rocky bed, it may exhibit all varieties of movement, but when gliding along a smooth channel, may keep a regular rate of time, that can be exactly defined."

It is natural for emotion to express itself in rhythmical sounds. The flood and ebb of the sound-current are a fitting embodiment of the flood and ebb of the feelings. The elations and depressions, the velocities and intensities in the flow of feelings are sympathetically reproduced in the rhythmical cadences of the words which utter it. This recurrence of sounds and silences at regular intervals of time, to pleasingly express man's emotion, and, at the same time, his mastery over it, is one of the oldest artistic instincts of the human race. Man has ever sung his heart, before he has spoken it.* The power of rhythm over an

* "Rhythm is the oldest and widest artistic instinct in man; for man is the emotive part of nature, and the movement of nature, it is the grand distinction of modern science to have shown, is rhythmic. Light and heat go in undulations; the seasons, the sun-spots, come and go in correspondencies; the variable stars brighten and pale at rhythmic intervals; the ocean-tides and trade-winds flow by rhythmic rule; planet, satellite, and comet revolve and return in proportionate periods. . . What is this but the rhythmic beating of the heart of the Eternal—a divine shuttle that weaves a definite pattern into the chaotic

audience lies largely in its unifying, appealing and pacifying qualities. The pleading of melody is combined with irresistibleness of movement. It has something subduing and consolatory in each detail, as well as something commanding and uniting in the sweep of the whole.

In ordinary conversation, which is liable to be interrupted at any point, there is little occasion or opportunity for rhythm. In an exact or scientific statement of fact, or in a philosophical argument, we feel that rhythmical pleasure is out of place, and may become impertinent. But in continuous utterance on any subject that appeals to the emotions, we gratify a natural instinct by falling into a certain regularity. Just as we modulate the character of *each* tone under emotional influence, so under such influence we naturally regulate the *flow of all* the tones as they follow each other. A passionate expression of our feeling would without rhythm be spasmodic and painful,

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fabric of things? After two thousand years or more, we are beginning to see dimly into Pythagoras' fanciful dream of 'the music of the spheres'; Plato's dictum, 'Time itself is the moving image of Eternity'; and the Orphic saying of the seer, 'The father of metre is rhythm, and the father of rhythm is God.'"—*Alfred Welsh, Development of English Literature and Language.*

"like the sobbing of a child." But rhythm orders, steadies and controls our expression and thus averts the pain. Impassioned speech, intended to be pleasurable, needs rhythm. If continued long without rhythm, it will not please. Under the influence of the feelings, the voice rises readily from a conversational to a rhetorical flow, and from this to a metrical flow, in song. Where Dickens describes the death of little Nell, the prose sentences can be numbered off into blank verse.

In deference to sentiment that is of grave importance, the flow of rhythm will be even and sedate; if the sentiment be deep and energetic the rate of movement will be regular and measured. If the tones be the language of sublime, pathetic and beautiful description, the rhythm will be grand and stately. In reading, declamation and recitation, the thought comes not from the productive faculties of the mind, but from the book or the memory, and the tendency of the rhythm to a monotonous uniformity or artificial formality is quite noticeable. Without being rigidly confined within the precise metrical frames of song, speech has its own rhythms, which a good ear can readily

recognize, and recognize as being peculiar to the manner of the individual speaker.

As in writing, so in speaking, some men, "by high excellence of natural or cultivated ear, succeed in imparting an exquisite but unobtrusive melody to their sentences, which forms one of the principal attractions of their style." This characteristic rhythm of each is owing to a skillful avoidance of abrupt elements, to a proper coincidence of accent, emphasis and inflection; of the melodic, rhetorical and grammatic accent; to a careful selection of successive consonants; more particularly to "an exact timing of the recurrence of accents at the end of clauses, and in the cadence of sentences; as these places are peculiarly adapted to sound intended for effect on the ear, whether the design of the writer is to render them prominent and striking, or subdued and quiet."

The sonorous effect of the periodic sentence, so well known in oratory, with its flowing sweep, its balanced antitheses, its regular cadences, is due in great measure to its rhythmical arrangement. The Ancient Grecian orators paid much attention to the construction of such oratorical periods. The rugged rhythm of Antiphon; the artistic

and versatile simplicity of Lysias; the subtlety, grace, ease, richness and variety in the development of the periodic sentence by Hyperides [according to the criticism of Longinus], who is styled by Prof. Jebb "the Sheridan of Athens" are equally striking. Isocrates, who lacked sufficient strength of voice to address the open-air gatherings of many thousands in the popular assembly or the law courts, devoted himself especially to developing the structure of the periodic sentence. Under the influence of his treatment, it is no longer rigid and monotonous, as it was in the case of Antiphon; no longer simple, terse and compact, as it was in the case of Lysias; but it becomes "ample, luxuriant, unfolding itself like the soft beauties of a winding river." Isocrates is said to have been the first Greek who worked out the idea of a prose rhythm, seeing clearly both its powers and its limits.

From Isocrates, this idea passed to Cicero. "When Quintilian says, somewhat hyperbolically, that Cicero has artistically reproduced 'the force of Demosthenes, the wealth of Plato, the charm of Isocrates,' he means principally this smooth and harmonious rhythm." And it is doubtful whether there

has ever been a greater master of the music of rhythm in oratory than Cicero.

More modern instances of the wonderfully varied effects of rhythm due to the selection and arrangement of tones, quantities and accents are to be found in "the majestic and measured declamation of Chatham, or in the lofty and magnificent strains of Scripture. The cadences of Ossian exemplify, sometimes, the power and beauty of metrical arrangement, and sometimes the cloying effect of its too frequent and uniform recurrence. Every cultivated ear is familiar with the chaste and pleasing turn of the sentences of Addison, the easy flow of Goldsmith's, the ambitious swell of those of Johnson, the broken and capricious phrases of Sterne, the noble harmony of Burke, the abruptness of Swift, and the graceful smoothness of Irving." In our own country the inobtrusive, soothing, beguiling cadences of Wendell Philips, 'felt rather than perceived,' are said to have been most worthy of wonder. Speaking of the power of that orator's quiet conversational rhythm, Thomas Wentworth Higginson says, "Then, as the argument went on, the voice grew deeper, the action more animated, and the

sentences came in a long sonorous swell, still easy and graceful, but powerful as the soft stretching of a tiger's paw. He could be as terse as Carlyle, or his periods could be as prolonged and cumulative as those of Choate or Evarts; no matter; they carried in either case the same charm."

Yet beautiful rhythmical form does not come to the speaker by any study of rules. The rhythmic quality is difficult to manage. Edward Everett, "with all his cunning, carried it to excess." He was "immeasurably measured." The very art of a Cicero and a Quintilian will tend to defeat its own purpose in speech. The spirit is not bound in its utterance. Uninterrupted harmony would soon become as fatiguing as constant sunshine. A cloud, a storm, a dissonance—in fact, any kind of diversion—is generally a welcome change, a relief. This is true no less in speech than in music. "Harmony, after discord, is a new pleasure; sunshine, after rain, gives fresh enjoyment. And so with rhythm. A break in the rhythmic form gives more real animation to a movement and stronger evidence of artistic spirit than strict observance of uniformity or of positive rules could possibly do. Contrast,

not uniformity, is a condition of every work of art. The petty artist, the mere scholar, will keep within the boundary of traditional rules; the great artist, the creator, the genius, will go beyond them."

The effect of the progressing rhythmical beat upon the human mind, even apart from the meaning of the interwoven words, is very remarkable. It arouses the mental powers, drives away weariness, lessens fatigue, detaches the mind from the painful realities of life, and braces up our courage to meet danger. The drumbeat drives the soldier on. The murmuring of the stream or the humming of the cradle song, the play of the fountain, the pattering of the rain, puts the waking brain to sleep; the solemnity of the chant in divine worship may be a mystic influence to lift us far above the dull routine of earthly experiences. Frequently the rhythmic beat in the tones of a speaker's voice will wake up trains of thought in the listener's mind, which have more attraction for him than the thought in the speaker's own words.

"The land of song within thee lies,
Watered by living springs,
The lids of fairy's sleeping eyes

Are gates unto that Paradise;
Holy thoughts like stars arise
Its clouds are angel's wings."

But it must be a poor satisfaction to be able to command the listener's ear, and not his soul and mind. After all, every speaker would rather have less music of utterance to instill or inspire reverie, and more mastery of thought to compel attention. When Guizot rose to speak in the French Parliament, every ear and every mind was on the alert. But the ear was drinking in substance, not music. The eloquence was terse, austere, demonstrative, and commanding. His audience hung upon the words with breathless attention.

Command of Audience.

'You could have heard
The beating of your pulses, while he spoke.'

Not a syllable, not an inflection of his voice was lost—nothing was repeated; and when he ceased, "it seemed as if the waves of an ocean had been spell-bound by his voice."

With Guizot's utterance, we might contrast that of him whom men have agreed to call "the golden-tongued." "I speak,"

says the latter, "as the fountains bubble, and still continue to bubble, though none will come to draw. I preach as the rivers flow, the same, though no one drink of their flood of waters." Yet the secret of Chrysostom's power, like that of Guizot, was the soul that was within the speaker. It was not in choice of language or facile turn of sentence. When Chrysostom rose and preached in the terrible insurrection in Antioch, his twenty-one famous homilies on punishment, repentance and consolation, rolled "like heavy peals of thunder with falling lightning, flash on flash, over the thousands fiercely thronging around his pulpit; or sometimes like the refreshing morning dew, trickling down into the hearts of the alarmed and contrite multitude. 'The sea is roaring!' he cried; only press in hither. Day and night the motherly embrace of the church is open 'to receive repentant sinners.'" His secret, apart from that noble spontaneity and "fresh buoyant, nervous style of delivery, like a stream that has burst from its rocky barrier gushing forth from the very depths of his heart," was the earnestness beneath those depths, which caused them to rise so irrepressibly,

The power of a mind richly saturated with culture, enthusiastically impelled by an earnest purpose, giving utterance to itself in full, musical, sympathetic tones, is perhaps most happily seen in the case of Rufus Choate. He was exact in argument, exhuberant in imagination, brilliant in statement, ample in development, gracious in address, burning in spirit, and captivating in utterance. "When he rose for his argument," says Dr. Storrs, "all facts reported by witnesses in the case, all the related and governing precedents, all legal principles bearing upon it, all passages of history, letters, life, that might illustrate his argument or confound his antagonists, seemed visibly present to his mind. He thought of nothing but jury and verdict. His eloquence was then as completely independent of technical rule as the screams of passion, or the shouts of a mob. He was after a favourable decision of the case, as if his own life depended on it. Short, sharp, shattering words rattled like volleys before and after resounding sentences. Language heaped on his lips. Images, delicate, homely, startling, blazed upon his pictured words. The common court-room became the scene of the

most astonishing intellectual action. Judge Shaw looked at him as he might have looked at the firm-set heavens, glittering with meteors. The farmers, mechanics, traders, on the jury were seized, swept forward, stormed upon, with an utterance so unbounded in variety and energy, sometimes so pathetic, sometimes so quaint, sometimes so grotesque—always so controlling and impellent, as only his hearers ever had heard. The velocity of his speech was almost unparalleled, yet the poise of his mind was as undisturbed as that of the planet."

The speaker who has in him the power of art, but not the power of purpose, may delight, but will not master men. The Emperor Nero believed himself to be a great artist. His dying words were, "*Qualis artifex pereo!*" Like many a more modern speaker, "the imperial *virtuoso* was particularly vain of his voice." To preserve it in good condition, he is said to have abstained from fruits and other food he thought injurious to it, and lay at night on his back with a small piece of lead on his stomach. He gave up addressing his troops and ceased to speak in the senate. He spoke only in

the presence of the *phonascus*, his vocal director, who warned him when his tones became too loud, or when he seemed to be in danger of straining his voice, and if he became too much excited in speaking, it was the duty of the *phonascus* to cover the 'imperial orator's mouth' with a napkin!

What a contrast in effect between the speaking of this oratorical trifler, and the words of one who came a generation earlier, inspired with the sublimest and loveliest purpose that ever filled the heart of God or man! Nero's words have passed into oblivion. Christ's words fill the earth to-day. They breathe and burn from a thousand pulpits. They fall like a hammer on millions of hearts. There are none like them to correct, comfort, and regenerate. Never man spake as He spake. But we know little of His voice. The only description we have of Him is one seen in a vision. In the Apocalypse, the Apostle John tells us that "His eye was as a flame of fire, and his voice as the sound of many waters."

We have all heard grand voices, round, full and finely trained, but promising so much more than their owners could fulfill. In such cases the very sweetness of the tones

sicken the thoughtful mind. "A musical voice which conveys meager ideas is a velvet coat covering a skeleton. The voice can only help ideas; it cannot produce them nor quite conceal their lack."

Does Mr. Spurgeon's voice account for his success? It does not. "Marvelous as it is, it has little flexibility or compass." Its loud pleasing, bell-like ring, is comparatively level in its intonation, with little variety in its modulations. It rarely rises to a trumpet tone, and never descends to the lowest deeps. It is chiefly remarkable for distinction and force. "Were his voice, however, ten times more impressive than it is, and as 'musical as Apollo's lute,' it would not alone account for his success, for it might be *vox et preterea nihil*, which surely would soon lose its charm."*

Yet that charm is *one* of the elements of his success. Why should not the voice of the speaker be carefully developed to embody and reinforce his mental power. Henry Clay's voice was to him a priceless possession. "Such compass and volume, richness and delicacy; captivating in its variations, thrilling in its deepest vibrations. He passed

* William Mathews.

instantly and instinctively from grave to gay, from soft whispers to resonant thunders; now it was like the multitudinous laughter of the waves as they kiss the beach; and again like the roar of the mad tempest beating against the rocks. Randolph as he passed through Washington in 1833, exhausted with consumption, to die in a Philadelphia hotel, begged to be borne to the Senate Chamber: 'That voice! that voice! I want to hear Clay's voice once more before I die.' Yet Clay got that command of voice with as much painstaking effort and discipline as Demosthenes used when he declaimed by the stormy Ægean Sea." The skillful command which Hortensius Quintus, who opposed Cicero then rapidly rising in eloquence, in the memorable case of Verres, possessed over his fine musical voice, did much to make him one of the most famous orators at the Roman bar. The contrast between Whitefield's printed sermons, and those marvelous vocal and oratorical powers that enabled him to weaken the head and touch the pocket, of that shrewdest and most unimpressible practical philosopher of the age,* against the latter's

* Benjamin Franklin.

own will, are too well known to need even mention.

The rise of Pericles to power in the most glorious period of splendid Grecian culture is to be attributed to the same combination of mental wisdom and vocal eloquence. Both he and the tyrant Pisistratus, before him, who came to his power by courting popularity in the democratic party of Athens, commanded musical voices and flowing speech. Pericles himself instituted musical contests in the Odeum, which he built, laying down the rules for the contestants, and acting as their judge. Indeed Pericles was one of the greatest orators that ever lived. The comic poets of the day were in general very unfriendly to him. Yet Eupolis says, "Persuasion sat on his lips." Aristophanes tells us, "He lightened, he thundered;" and Cratinus calls him, "Greatest of Grecian tongues."

The most thrilling example of the power of the human voice, properly trained, over the minds and souls of men, which I remember, is that of a speaker—born in the backwoods in a little log cabin—scared in making his first speech at boarding school—who stepped forth in the largest city on the West-

ern continent in the darkest hour of American history, and with five short sentences quelled the rising passions of an immense multitude who knew not his face, nor had ever heard the tones of his voice before.

It was the morning after President Lincoln's assassination. The excited country feared for the government's fate. "Posters in great black letters were stuck up everywhere in New York, Brooklyn, and Jersey City, calling upon all loyal citizens to meet around the Wall Street Exchange and give expression to their sentiments. Fifty thousand people jammed the streets. On the right suddenly the shout arose, "The World!" "The *World!*" and a movement of perhaps eight thousand to ten thousand turning their faces in the direction of that building began to be executed. It was a critical moment. What might come no one could tell, did that crowd get in front of that office. A telegram had just been read from Washington, "Seward is dying!" At that juncture, a man stepped forward with a small flag in his hand and beckoned to the crowd. "Another telegram from Washington!"

"And then, in the awful stillness of the

crisis, taking advantage of the hesitation of the crowd, whose steps had been arrested a moment, a right arm was lifted skyward, and a voice, clear and steady, loud and distinct, spoke out:

**"Fellow-citizens! Clouds and darkness are round about him! His pavilion is dark waters, and thick clouds of the skies! Justice and judgment are the establishment of His throne! Mercy and truth shall go before his face. Fellow-citizens! God reigns and the Government at Washington still lives!"**

"The effect was tremendous. The crowd stood rooted to the ground with awe, gazing at the motionless orator, and thinking of God and the security of the Government in that hour. As the boiling waters subside and settle to the sea, when some strong wind beats it down, so the tumult of the people sank and became still. All took it as a divine omen. It was a triumph of eloquence, inspired by the moment, such as falls to but one man's lot, and that but once in a century. The genius of Webster, Choate, Everett, Seward, never reached it. What might have happened had the surging and maddened mob been let loose, none can tell. The man for the crisis was on the

spot, more potent than Napoleon's guns at Paris. I enquired what was his name.

"The answer came in a low whisper, 'It is General Garfield, of Ohio.'"

# INDEX.—THE VOICE.

BY THE SAME AUTHOR.

# THE CHARMS AND SECRETS OF GOOD CONVERSATION.

## A Dainty Brochure on a Lovely Art.

"It is full of good things, crowded into small space."—*Christian Advocate*, Pittsburgh.

"Is to be classed with valuable goods in undersized packages."—*Journal of Education*, Boston.

"Quite worthy of the warmest praise. It is in itself a sample of what good conversation should be."—*Intelligencer*, Lancaster, Pa.

"A neat, readable and helpful little essay. 'Perfect conversation,' he truly says, 'is rare and high art. It is one of the finest of the fine arts.'"—*Zion's Herald*, Boston.

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"In choice English, the praises of 'good conversation' are told, and indirectly many hints can be gleaned of how to cultivate these 'charms and secrets.'"—*Morning Star*. Boston.

"A delightful essay. In pure and rhythmical prose the essayist has woven advice that it will benefit the majority of people to take to heart. Readers will find in this unpretentious little book a lecture so charmingly interesting that its hints will sink deeply in the mind, and remain for future guidance."—*Eve. Wisconsin*, Milwaukee.

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"Like a nosegay of Spring flowers, whose odors tell of a South wind that has been toying with the treasures of field and garden, comes this charmingly-written and daintily-printed volume, laden with the rare sweets of an intellectual conservatory. There is a delicacy in the very look of its clean pages that suggests modesty and purity. Mr. Schmauk tells in his own interesting manner, much about the charms and secrets of good conversation, which it would do well for the rising generation to carefully consider."—*Times and Dispatch*, Reading, Pa.