

just in front; and the diaphragm moves downward and expands at the waist in direct opposition to the action of the abdominal muscles upward. The muscles support the voice and the diaphragm the breath, as will be explained later on. To feel outwardly the action of the diaphragm, place the fingers a little to the side directly above the waist-line, as pictured at figure No. 2.

Having to some extent analyzed the mechanical action of the cough, we will next endeavor to produce a speech tone with the same movement of these strong muscles. First close the lips tightly and utter a prolonged groan. This will occasion the same action of the abdominal muscles and diaphragm, but the action will be more sustained and less spasmodic than that produced by the cough. Repeat the groan several times. Next, drop the lower jaw easily, as pictured at figure No. 3, being careful that there is no tension or restraint upon the muscles of the throat and chest; and then with the same sustained action of the muscles as was employed in uttering the groan try to say *ah*, sounding the *a* as in *arm*. Repeat several times, observing carefully that the action on the tone is exactly like that produced by the groan or cough.

This done, take up the vowels, *a*, *e*, *i*, *o* and *u*, and endeavor to sound each one as above described. *O* is usually the easiest to sound and is, therefore, the best one to commence with. Round the lips carefully to give purity to the tone, and then, in a naturally deep voice and with the spasmodic action of the abdominal muscles observed in the cough, sound the letter *o*, as represented at figure No. 4. If you succeed well with this vowel, endeavor to say *a* and all the others in turn with the same deep, pure tone, taking *o* as a key-note by which to sound the other vowels; or, if another vowel seems easier to articulate than *o* and sounds purer to the ear, take it as a key-note and endeavor to sound the others like it.

In this way we can locate our tones. Be very careful in uttering each vowel to have the action of the abdominal muscles and of the diaphragm exactly as it was in the cough. There is sometimes a tendency to draw the diaphragm upward and the abdomen inward when saying the vowels, or to throw the abdomen outward in front instead of with the lateral action at the sides that is to be noticed in natural coughing, laughing, etc. Both of these incorrect movements must be carefully avoided.

Perhaps the first attempt at producing these vowel sounds may be very unsuccessful. The tones may be rendered nasal by an improper use of the resonators, by an escape of air into the nasal cavity or by the speaker not opening his mouth sufficiently wide to produce a pure, round tone; or the voice may be husky or "throaty" in quality, owing to a restriction of the muscles of the throat and chest; or it may be high-pitched and harsh, denoting a lack of dependence upon the lower resonator, the thorax, the abdominal muscles and the diaphragm to produce the tone. It may be necessary to make a number of trials in order to produce a really pure tone with a certain vowel, and the ear must be quick to recognize the difference between a pure and an impure sound. Moreover, the student must become accustomed to hearing the voice pitched in a very much lower key than the one ordinarily used; for bringing the stronger, deeper muscles into play must of necessity deepen the tones, if they alone are depended upon, as they should be, without restriction or effort about the upper resonators.

After practising the vowel sounds with the sharp attack of the abdominal muscles, as just described, try them with the more sustained action produced by the groan, thus prolonging the sounds. Be particularly careful to retain the purity and clearness of tone acquired in the practice with the sharper pronunciation of the vowels.

Now let us consider how to overcome some of the difficulties which may beset the student. A stiff, inflexible jaw is often a great obstacle. Sometimes this member seems almost immovable, and again it moves too much, performing the office of the tongue; but the latter defect we will explain fully when we reach the chapter upon articulation. For the present we will confine ourselves simply to the methods of voice-production.

RELAXATION OF THE JAW.

To relax the jaw, sit in the position described above, and, without lowering the head, allow the lower jaw to fall in an inert manner, just as it might drop if one were falling asleep (See figure No. 5.) Repeat this action several times, at the same time relaxing the tongue and all the muscles about the entrance to the throat. Teach the tongue to lie perfectly flat and inactive in the mouth, with its tip over the lower teeth and touching the inner side of the lower lip. Occasionally feel the muscles about the throat with the fingers, to see that they are soft, pliable and wholly relaxed.

After several repetitions of this exercise, drop the jaw as indicated at figure No. 3; and then, without altering the position of the mouth and jaw, but with the mind centered upon keeping the throat well open and the uvula raised, and with the strong, expansive action of the abdominal muscles and diaphragm, say *ah*, sounding the *a* as in *arm*, with a round, pure tone of voice. The correct appearance of the mouth and throat during vocalization is illustrated at figure No. 6.

It may be difficult or impossible to follow these directions at the first attempt. All the muscles at the back of the mouth and throat may be weak from years of disuse or improper use, or they may be very much restricted from too great action in producing voice. To form a pure, resonant tone, the throat must be open and relaxed, and yet the muscles must be elastically firm and well under the control of the will; the root of the tongue must also be well controlled, and the uvula exercised to raise at will. The back and roof of the mouth will form an arch, a clear and unobstructed resonance chamber for the sound to pass through.

EXERCISE TO RELAX THE TONGUE.

It may be noticed that the tongue is physically a very unruly member, never staying just where we wish it to; so one of our first efforts must be to gain control of it, which may be done in a short time with diligent practice. Open the mouth wide and with a hand-mirror see if the tongue can be lowered at the back, as pictured at figure No. 7. If not, take the handle of a spoon and gently press the tongue down, at the same time endeavoring, by an effort of the will, to relax it and thus assist the action. When the tongue is in proper position, try to retain it so entirely by the power of the will, at the same time removing the spoon, and keeping the tip of the tongue over the lower

teeth, and touching the lower lip, also as shown at figure No. 7. Then try to accomplish the same result without the aid of a spoon.

Sometimes the tip of the tongue is as unruly physically as the root, having a constant tendency to fly up to the roof of the mouth, and consequently very imperfectly performing its function of enunciation and articulation. The same exercise in relaxation will greatly benefit this portion of the tongue, and so will the practice of articulating the vowel sounds with the tip of the tongue in its proper position, as in the exercises that are to follow. Perfect control can be gained over the muscles only by first acquiring the power to relax them and thus teaching them to respond to the correct and artistic dictates of the will. Faithfully practice the exercises last described a little each day, until the tongue becomes perfectly manageable and can be held in any position desired. Use the hand mirror assiduously to make sure that the vocal organs are all in proper position.

TO OPEN THE THROAT AND RAISE THE UVULA.

After relaxing the tongue, and while the mouth is well open and the tongue lying flat, draw the air inward and lower the jaw, as in the act of yawning, at the same time centering the mind upon raising the uvula and soft palate. This practice opens the throat and exercises the muscles of the throat and mouth. It may cause a sensation of choking at first, but as the muscles become stronger, this will cease. Practise only a few moments at a time.



FIGURE NO. 3. FIGURE NO. 5.



FIGURE NO. 4.

FIGURE NO. 6.

FIGURE NO. 7.