

greater the amplitude, or extent of movement, the louder the tone. This will be largely determined, not so much by the force of the current of air from the lungs as by the degree of elasticity of the cords.

189. The quality or timbre of the voice depends on the same laws as determine the quality of musical instruments. The tone produced by the vibrations of the cords is a compound tone depending on a fundamental tone which gives the pitch, with which are combined many partials or overtones, which, as regards the number of their vibrations, are simple multiples of the frequency of the fundamental. Thus, if the fundamental tone is produced by, say, 100 vibrations per second, then the partials are in the order of 1, 2, 3, etc. ; that is, the first partial corresponds to 200 vibrations per second, the second to 300, and so on. The cavities above the cords, such as the space immediately above the cords and below the so-called false cords, the cavity of the pharynx, nasal passages, sinuses in the bones of the face, and the mouth, all act as resonance chambers. These develop,