

muscles at will without making any sound. Then I tested the effect of the motion upon the quality of the voice. When the muscles were relaxed and the cavity of the pharynx expanded the quality of the voice was good, but the moment the side walls of the pharynx commenced to approach one another (see dotted lines in Fig. 2.), the character of the voice changed. It acquired a pecul-

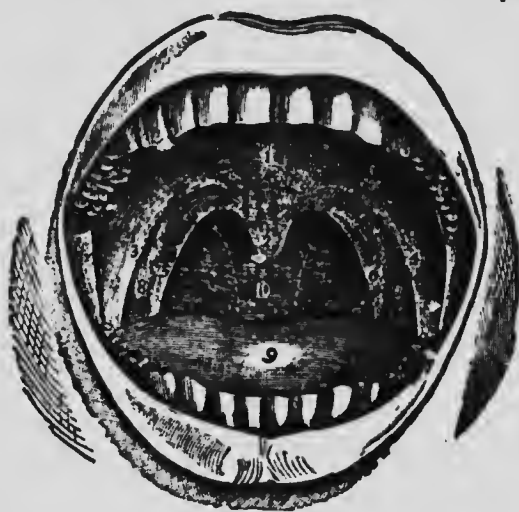


Fig. 2.*

1. Soft palate. 2. Uvula. 3, 4. Anterior pillars of the soft palate. 5, 6. Posterior pillars of the soft palate. 7, 8. Tonsils. 9. Tongue. 10. Back of the pharynx. The posterior pillars of the soft palate (5, 6,) are capable of approximation, as shown by dotted lines.

iar metallic ring, somewhat like the tone of a brass musical instrument. The effect became more and more disagreeable as the side walls approached, until the peculiarly distressing effect was produced, which I have likened to the cry of a peacock. Having gained this information I attempted to improve the voices of the children. For this purpose I gave them hand mirrors and taught them to depress their tongues so as to render visible the soft palate and back of the pharynx. I then made them look into my mouth while I silently contracted and expanded the pharynx. After some practice they were able to imitate the action.

I then placed my hands on my throat while I repeated the exercise with voice. Their first attempts at reproduction were failures; the moment they sounded the voice, a powerful contraction

* Reproduced from "Voice, Song, and Speech."