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The Harp of 3,000 Strings.



UT just as white light may be shown to consist of seven different colors, so also many notes are a combination of several fundamental notes. By these notes a complicated wave form will be caused which, when it strikes the tympanic membrane may make one part of that organ bulge outwards at the same time that another part bulges inwards. Nevertheless, the wave is transmitted faithfully and eventually reaches the cochlea. Here comes a difficulty. Is there in the organ of Corti a special cord or rod for every possible combinational note or do the rods separate and analyze the whole note into its constituent simple ones? In other words, does the organ of Corti do for sound what Newton's prism did for light. The point is much disputed, and indeed more than these two theories are advanced. Personally, but with all due modesty, I favor the second theory. I believe that each rod of Corti's organ is a resonator,—acting in the same way as the globes on Helmholtz's machine,—which picks out from the combinational note the constituent note whose wave length is the same as its own, excites the nerve filament corresponding to that note and carries the sensation to the brain. The brain adds up the various sensations received from the different nerves corresponding to the various fundamental notes contained in the combinational one, and the result of that addition is the fundamental note.