



Vol. XIII.

OTTAWA, ONT., JANUARY, 1911.

No. 4

Entered at the Post Office at Ottawa, Ont., as Second-Class Matter.

The Harp of 3,000 Strings.

LIKE the intelligent workman who first becomes acquainted with his instruments, so that he may not call for a plane when he wants a draw-knife, we have now touched upon each part of the complicated machinery by which the sonorous vibrations of external nature are carried to the auditory nerve. We have yet, however, to learn the particular use of each part.

As we have mentioned before, sound can be propagated through any elastic medium. Hence even the bones of the head could conduct sound to the inner ear or a simple open tube from the auricle to the inner ear should serve the purpose. The entire elaborate mechanism of the organ of hearing can then only be for the purpose of rendering more easy and perfect the sonorous vibrations, and multiplying them by resonance. From their structure and their action, anatomy has found that this is so.

The external ear serves in three ways:—(1) by collecting the vibrations and leading them into the meatus, (2) by the conducting power of the cartilage and membrane composing it, and (3) by the resonance of the column of air it contains.

The peculiar shape of the auricle is so that it can present a perpendicular surface to vibrations no matter what direction they come from. These are carried by the cartilage to the tympanum. The vibrations that fall obliquely are carried to the tympanum by successive reflections from the walls of the auricle