

The first symptom of deafness separately mentioned is tinnitus—this however, often exists as an affection *per se* and is frequently noticed when hearing is perfect. The author in alluding to the contrariety of opinion as to its cause, says, that recent observation proves that it is generally induced by a species of hyperæsthesia or morbid irritability of the auditory nerve. We have no doubt in our mind that this explains its presence in many cases but we also feel that it is inadequate to account for some others which, though perhaps less frequent, are yet as important to know as the former. Without entering upon a thorough survey of the varieties of tinnitus, we may observe that *two* have occurred to us that are not commonly recognized. We are not insisting so much upon any difference in the character of the disorder as upon its proximate cause or *nature*, for it would seem here as in other cases that the same features are presented by dissimilar agencies. Tinnitus, as understood by Dr. H., is really an illusion, for a sound is heard when there is no material cause for its production—it proceeds from an error of innervation in the absence of the usual operation by which sound emanates and is communicated. So that, if, as is admitted, organs that have never received impressions can at no time become the seats of illusions based on those impressions; as for instance those born blind can never apprehend optical illusions—so that if this postulate be true, tinnitus, as described by Mr. H. could never afflict the person deaf from his birth. But it is not so with the forms we think we have recognized; in these no such exemption would be entailed, and the cause of sound is *bona fide* present and obviously material.

In the first form the Tinnitus consists of a confused humming sound or resembles the first sound of the heart exaggerated, considerably protracted—it is continuous for the time it lasts, but is not of long persistence and in its occurrence may be either occasional or more repeated and assume a more or less distinctly paroxysmal condition. We refer it to a spasmodic state of the muscles of the tympanum, in consequence of which the tensor membrane tympani changes the tension of the membrana tympani alternately increasing and diminishing it—and to the musculus stapedius which exerts the same change on the membrane of the fenestra ovalis—a secondary result also produced by this spasmodic action is to alter the relative position to each other of the chain of bones that stretches between these membranes: now in these three actions, the muscular contraction, membranous tension and osseous transpositions we believe, will be found the causes of the Tinnitus we are describing—and this view derives the more probability from the identity it establishes between the agency of the tinnitus and that of the sound to which we have already likened it. The first cardiac sound is part-