

of the auriculo-ventricular valves is more frequently found at the post-mortem than it is diagnosed during life. Relative incompetence, therefore, is not necessarily indicated by the presence of a murmur.

I cannot here enter fully into the histological nature of hypertrophy, although perhaps as a pathologist it might be expected that I should say some words upon this point. I will only say that while one can, in certain cases of hypertrophy, make out clearly that the individual fibres have undergone a definite increase in size, it is far more common to note, and of this there can be no doubt, that there has been an actual numerical increase in the fibres. This increase appears to be general throughout the ventricular wall and is possibly, nay probably, due not only to a new growth beneath the endocardium especially, but also to a splitting up or division of pre-existing fibres. It must be remembered that the heart muscle fibre is not a single cell, but is a compound, the result of a fusion of several cells into one individual unit. As a consequence of this it is possibly more easy for the fibres to split up into independent territories without undergoing temporary derangement of function than is the case with the cells of those tissues formed of isolated cell units.

To pass on now to certain aspects of this subject of hypertrophy more immediately in connection with this evening's discussion, I would point out that of the cases of hypertrophy without valvular lesion, we have to consider in the first place increased resistance through the column of blood. This could be brought about by increased amount of blood to be propelled, or, in the second, by increased resistance to passage in the arterial system. Of these two the first may exist as a constitutional condition, but the more one studies the less assured does one become that there is such a condition as general plethora unless these case be regarded as true plethora in which (as in German beer drinkers) there is oft repeated flushing of the circulation with imbibed fluid. Of increased resist-