

fuller, and more tense than natural."

"These characters of the pulse are still more marked in hypertrophy with dilatation, so long as the hypertrophy is predominant." "In hypertrophy with dilatation the signs are a compound of those of hypertrophy and those of dilatation."—*Hope*. "From a stronger impulse we argue *only the probability* of a hypertrophied heart; but we argue its certainty from a stronger impulse joined with a diminished sound. When impulse and sound increase together, there is probably no hypertrophy."

—*Latham*. "The physical signs of hypertrophy are intelligible and characteristic. The increased mass of the muscular fibre renders their act of contraction stronger than usual; hence the impulse is also strong. But the character of this impulse, as well as the sound which attends the contractions, will depend on the form which the hypertrophy has assumed. When it is a simple thickening of the wall, without increase or diminution of the cavity, the impulse will be gradual and heaving as well as strong, both because thick muscles cannot contract so simply or abruptly as those that are thin, and because the enlarged size of the heart brings more of it in successive contact with the ribs. So likewise the first or systolic sound will be prolonged, but duller than usual, because the sounding transition of thick walls from loose to tight is less extensive, abrupt, and instantaneous than when they are thin."

"When, on the other hand, the hypertrophy is dilated, there are better conditions for generating sound; the walls being loose and flabby, pass with a greater abruptness into the tense state of contraction, and yield a louder sound; whilst the impulse although strong is more abrupt, and in cases of extensive disease is followed by a motion of col-

lapse, from the sudden falling back of the large heart into a state of passive looseness at the moment of diastole."

"And when the disease is considerable, and unattended with an emphysematous state of the lung, there will be dulness on percussion, more or less extensive according as the enlarged heart is in contact with the thoracic walls."—*Williams*.

The first idea that would strike one on examining, or hearing of this case, is that there was dilatation with hypertrophy. But the præcordial dulness being natural, the apex striking in the normal spot, and there being no back stroke, forbade this. The next, that it was nervous palpitation, the frequency of the impulses, and the character of the first sound, and the pulse sustaining this idea. But the force of the impulse and of the second sound, decided me on pronouncing it a case of hypertrophy of the left ventricle, without attempting to explain the irregularity.

It will be naturally expected, that I should offer my ideas on the causes of the unusual signs, which I do in all diffidence. The pulsations of the heart were increased in frequency in order to deliver a sufficient supply of blood to sustain the vital functions in all parts of the body, that fluid being evidently reduced to a minimum amount compatible with life. The cause of the peculiar character of the first sound seems to me to be at least plausibly accounted for thus:—It will be recollected, that in the reclined position (the only one the patient was examined in, on account of the distress caused by every other;) the right ventricle was thrown much more anterior than natural: I believe that the left ventricle was giving out no sound except the feeble click of the aortic valves, most audible over the aorta, and that the first sound was