

remained so for several months, only occasional slight trouble. The other day, now February 6, 1871, he called, with difficulty in the tooth that had prevented him from sleeping. I at once decided to drill the filling out, which was a difficult task. I also tried mercury and the warm instrument but with slow progress. On removal I found slight exposure of pulp in the bottom; no discoloration; no change in the amalgam, as it was an excellent article, and entire relief followed removal; by a slight touch with a sharp excavator hæmorrhage ensued. I treated the case with creosote at bottom and styptic calloid over for one week or more, the tooth remaining all the while perfectly quiet. One interesting feature in this case is that the pulsations of the pulp could be distinctly seen with a magnifier at the point of exposure—every *systole* of the heart, the pulp at that point filling the slight vacancy caused at every diastole.

The pulp seemed to expand and contract according to the heart's action. Every time it expanded up into the slight opening there was a small bubble of liquid as I dried the cavity, that apparently came from the pulp chamber falling back into the chamber at each diastole. On application of the tongue over the cavity a distinct pulsation would be felt for a few minutes, at which time the throbbing seemed to be much more energetic, which lasted for a few minutes only.

I decided on refilling with some temporary filling, as he had to leave the city and would be absent for 5 or 6 months. I cut a round piece of soft spunk of good texture and thickness, moistened one side with creosote, then laid this in the bottom of the cavity, creosote side to the nerve, pressed it in all round gently and filled over with os artificial without the slightest pain or trouble. This spunk is very soft and elastic, and would readily yield to the pulsatory motions of pulp—more readily than any thing I knew of. I saw him this morning, there was not the slightest trouble whatever, the filling now having been in 24 hours. This case in itself is not of much moment as an isolated case, only it serves for a text for further remarks, and is a practical case in point.

It is well known that the pulp does not exactly fill the chamber full, but has a small space all round it, which is recognisable by a magnifier of  $\frac{1}{2}$  inch focus or more. This minute space serves as a reservoir to hold the reserve nutriment liquor sanguinis for the use of the dentinal fibrils, as nutrition—I might call it by some other name—and also to return waste matters to the circulation. There seems to be, then, another, and not less important function connected with this small outside space, that is, that it allows room for the pulp to expand and contract, in accordance