SHORTER CONTRIBUTIONS.

THE 'HAUNTED SWING' ILLUSION.

BY R. W. WOOD.

I was much interested this summer in the curious sensations produced by a purely optical illusion, known as the 'Haunted Swing,' at the Midwinter Fair in San Francisco. On entering the building we found ourselves in a spacious cubical room, furnished with a sofa, table, chairs, etc., a massive iron safe, and a piano, together with other minor articles. But the most conspicuous object was the huge swing, capable of holding forty or more persons, which hung in the centre, suspended from an iron cylinder which passed through the centre of the room. We took our seats and the swing was put in motion, the arc gradually increasing in amplitude until each oscillation carried us apparently into the upper corners of the room. Each vibration of the swing caused those peculiar 'empty' sensations within which one feels in an elevator; and as we rushed backwards toward the top of the room there was a distinct feeling of 'leaning forward,' if I can so describe it—such as one always experiences in a backward swing, and an involuntary clutching at the seats to keep from being pitched out. We were then told to hold on tightly as the swing was going clear over, and, sure enough, so it did, though the illusion was not so perfect as the high oscillations.

The device was worked in the following way: The swing proper was practically at rest, merely being joggled a trifle, while the room itself was put in motion, the furniture being fastened down to the floor, so that it could be turned completely over. The illusion was good, though the absence of centrifugal force, and the fact that the swing did not move with uniform acceleration as it descended, would indicate to a careful observer that he was not swinging freely. The curious and interesting feature however, was, that even though the action was fully understood, as it was in my case, it was impossible to quench the sensations of 'goneness within' with each apparent rush of the swing. The minute the eyes were shut the sensations vanished instantly. Many persons were actually made sick by the illusion. I have met

a number of gentlemen who said they could scarcely walk out of the building from dizziness and nausea. I myself experienced no sensations of dizziness, being accustomed to heights and to rapid motion; but the sensation before described was always present (and I visited the place several times), though I tried to suppress it and reason against it.

HEAT SENSATIONS IN THE TEETH.

BY HENRY RUTGERS MARSHALL.

In the course of a late operation upon one of my teeth I experienced a very powerful and distinct sensation of heat whenever the dental instrument touched a very thin layer of the tooth substance (dentine) which still remained protecting the 'pulp' from exposure.

The well-known Dr. Frank Abbott, who operated upon my tooth, and whose long and wide experience enables him to speak with authority, assures me that this sensation of heat is entirely independent of the temperature of the instrument employed: that in his experience he finds that any mechanical irritation of the dentinal fibers, when inflamed, will produce this sensation of burning, it being especially marked when the fibres are dragged asunder by the revolving instruments often used. The same heat sensation is produced, he tells me, by the rapid absorption of moisture produced by placing against this highly sensitive tissue a bit of 'spunk' or 'bulbulous paper,' or other rapid-absorbing substance. The substance called 'spunk,' which he uses for this purpose, is supposed to be nothing more than a tree fungus of especially fine fibrous nature.

It is apparent that we have here a production of heat sensations by stimulations which do not correspond in any evident way with the stimulations that produce heat in the 'heat spots' on the surface of the skin. I think it well to make note of these particular dental experiences in order that those who may be investigating the nature of the processes involved in the production of our sensations of heat and cold may upon occasion verify them, and may coördinate them with the more familiar means of heat production in the formulation of their theories.