

hours was found to be completely permeated. On further examination of the cement taken from the tubes there was evidence of complete permeation. A glass cylinder was filled, and at the end of forty-eight hours the mass became so loose in the cylinder that it was easily shaken out. This would suggest that the mass contracted.

ONYCHLORIDE.—Thirteen tubes were filled with oxychloride of zinc. At the end of forty-eight hours, eleven out of the thirteen tubes were markedly colored. On further examination of the cement taken from the tubes, it was found that the color had permeated the substance of the mass. A mass about the size of a bean was mixed and placed in the solution for twenty-four hours, at the end of which time the color had permeated the whole mass.

GUTTA-PERCHA.—Thirteen tubes were filled with gutta-percha, using points heated and well packed in with hot instruments. The walls of the tubes were moistened with eucalyptus before the gutta-percha was introduced. At the end of forty-eight hours, six tubes were colored, while seven were not. In the same solution was placed a ball of gutta-percha, and at the end of forty-eight hours the color could not be readily washed from its surface, and yet it could not be made out that the color had entered the substance of the gutta-percha. On further examination of the gutta-percha in the tubes it was evident that in the six cases colored, that the solution ran up around the filling, as there was no color in the substance of the gutta-percha. In filling the tubes in the manner described, it was found that as soon as the gutta-percha cooled, that it contracted and did not perfectly fill the tube. Thus it would seem to be unwise to make gutta-percha plastic by heat to pack it into a root canal.

CHLORA-PERCHA AND GUTTA-PERCHA POINTS.—Ten tubes were filled with chlora-percha and gutta-percha points. The points were made slightly smaller than the bore of the tube, and pressed into place cold. An excess of chlora-percha was avoided as far as possible. At the end of forty-eight hours, seven tubes were not colored and three were. In one case the solution appeared to have run up the side of the tube and lodged in a vacant place in the filling.

COTTON WISPS, SOAKED IN CHLORA-PERCHA.—Ten tubes were filled with cotton wisps soaked in chlora-percha. In forty-eight hours, eight out of the ten cases showed marked coloring from the solution.