

a sinuous slightly raised line, half an inch from the apex, seemed to mark off the crown from the fang, and probably indicated where the gum had embraced the tooth. The outer surface of the tooth was smooth, except near the base, which was marked longitudinally with shallow furrows; it was of a dull whitish-yellow colour.

About the middle of the elongated base was a narrow chink, which had evidently at one time extended along its whole length, but in course of time had become almost entirely occluded. When a vertical section was made through the middle of the tooth, this chink was seen to communicate with a pulp-cavity, which extended to 4-10ths of an inch from the apex of the tooth. Near the base of the tooth the cavity was so contracted that the opposite walls were almost in contact, but in the middle of the tooth it dilated into a well-marked cavity (Pl. III. fig. 20).

A thin vertical section was then cut out of the tooth from base to apex, and prepared for microscopic examination. Under a low power the tooth was seen to consist in its greater part of dentine, which formed the wall of the whole of the pulp-cavity, except at the basal end of its contracted portion. In the upper third of the tooth the dentine tubes radiated in a very regular manner from the pulp-cavity outwards, but in the lower two-thirds, they were broken up into clusters and tufts, and sometimes irregularly scattered throughout the dentine matrix. The surface of the section through the dentine was marked by contour lines parallel to its surface, which expressed the primary curvatures of the dentine tubes (fig. 20). But, in addition, a line of interglobular spaces lay in the substance of the dentine, parallel to these contour lines, and about midway between the most external of them and the exterior of the dentine. This line of interglobular spaces did not pass in one direction much beyond the apex of the pulp-cavity, but in the other it extended some distance into the fang.

The dentine in the crown was invested by a thin layer of substance, which had the position and relations of a layer of enamel to the dentine. It extended as far down the tooth as opposite the apex of the pulp-cavity, where it was overlapped by the cement, but at the very tip of the tooth it was absent, having apparently been worn off. The characteristic enamel structure was not so definite in it as in the corresponding layer on the crown of the young tooth of *Mesoplodon layardi*, but in thin sections it was seen to be traversed by fine lines extending perpendicularly to the surface of the tooth, which obviously indicated the direction of the rods of enamel. But the exterior of the crown did not have the brilliant white appearance so characteristic generally of the enamel.

The free surface of the fang was invested by a thin but definite layer of cement. Where the dentine was covered by the cement, a change in the structure of the dentine occurred. Vascular canals were seen to lie in it perpendicular to the free surface of the tooth, and forming loop-like curves immediately subjacent to the cement. This portion of the dentine was, therefore, a vaso-dentine. As the cement and vaso-dentine were traced lower down in the fang, other modifications became apparent. The vaso-dentine