dentine. This difficulty would have been increased if the layer situated in the fang between the cement and dentine had been the only one present, as from its position it might have belonged either to the cement or to the dentine. But as a layer of similar structure also existed next the pulp-cavity, there can, I think, be little doubt that it had arisen from the pulp, and notwithstanding the absence of dentine tubes, may be regarded as a modified vaso-dentine, to which substance also the deeper layer of the covering of the fang may be referred. This conclusion is supported also by what is known of the structure of the teeth of some fish in which the dentine consists of a substance destitute of dentine tubes, but possessing a finely-granulated matrix in which vascular canals ramify.[1]

When I received from Mr Moseley the lower jaw of the adult *Mesoplodon layardi*, only the left tooth was in its socket, the right had previously been extracted. The socket was situated at the junction of the symphysis with the body of the lower jaw, but more of the tooth was implanted in the body than in the symphysis. The length of the extracted tooth was 14 inches, 6½ inches of which had been included in the alveolus, or surrounded by the gum. The breadth of the tooth, where it emerged from the alveolus, was 3½ inches. Each tooth consisted of a denticle proper and a strap-shaped shaft. The shaft was laterally compressed, and as it emerged from the socket, it curved obliquely backwards, upwards, and inwards, so that its inner concave surface had been in relation to the side and dorsum of the beak. As the summit of each tooth passed to the opposite side of the middle line, the two teeth crossed each other on the dorsum of the beak, and from the smooth appearance of the anterior border and inner surface of each shaft it is evident that they must have rubbed against each other, or against the beak, during the movements of the lower jaw in the act of opening the mouth. The shaft represents, though on a much enlarged scale, that part of the young tooth which I have named the fang.

The denticle proper projected almost directly upwards from the outer edge of the upper end of the strap-shaped shaft, where it became continuous with the anterior border. It was triangular in shape, its base being half an inch, whilst its diameter from apex to base was 3-10ths of an inch (Pl. II. fig. 17). The base sprang abruptly from the shaft, and some irregular patches of a glistening white enamel formed its outer surface, but the enamel was not continued upwards to the apex of the tooth, which was formed of dentine. In Professor Owen's figure of the denticle of the tooth of the original specimen, whilst the enamel is apparently worn off the tip of the denticle, the base is represented as enveloped by a more complete layer than in this animal. It is also stated that the matrix, by which is obviously meant what I have called the shaft of the tooth, is calcified without enamel.

In the extracted tooth the alveolar end was seen to be closed, and to terminate, as in Professor Owen's description of the original specimen, in a solid jagged border. The surfaces of the imbedded part of the shaft were grooved with irregular longitudinal

[1] Owen, Odontography, 1840–1845. C. S. Tomes, Manual of Dental Anatomy, p. 79, 1876.