internal meatus of the petrous bone was a single canal in the young *Mesoplodon*, but was divided into two in the adult *Mesoplodon* and in *Ziphius*. The surface anterior to the meatus was roughened and slightly convex in *Mesoplodon*, but was elevated into a prominent tubercle in *Ziphius*. In both, the stapes formed a solid column of bone ankylosed to the inner wall of the tympanum (Pl. I. fig. 5). The most important difference between the petro-tympanic bones in the two animals was the bilobed character of the under surface of the tympanic in *Mesoplodon* and not in *Ziphius*, a character which *Mesoplodon layardi* shares with the other species of *Mesoplodon* described by Professor Flower in his recent memoir on this genus,[1] which is possessed by the true *Dolphins* and, as he points out, also by *Berardius*. Thus, by its tympanic bone, *Ziphius* may be distinguished from *Mesoplodon* as readily as by the differences in the naso-premaxillary region, the value of which I dwelt on in my former memoir on these genera.[2]

In *Mesoplodon layardi* the sphenoid took but a very small part in the formation of the temporal fossa. The parietal formed the larger part of its floor, and in the younger skull could be followed as a distinct bone situated between the supra-occipital and the frontal to the vertex, where it was united by synostosis to its fellow. In the adult, though the outline of the parietal in the temporal fossa could be readily seen, no part could be traced beyond the fossa to the vertex, for it was overlapped by the growth of the supra-occipital, so that only the thin edge of the frontal bone appeared in the interval between the supra-occipital and superior maxillary. The vertex part of the frontal articulated anteriorly, as in *Mesoplodon sowerbyi*, with the superior maxillæ, præmaxillæ, and nasals. The frontal formed the roof of the orbit and possessed a strong postorbital, but a feeble preorbital process. The malar bone consisted anteriorly of a flattened plate, which articulated with both the superior maxilla and the lachrymal: from this plate a long slender zygomatic bar passed backwards below the orbit to articulate with the zygomatic part of the temporal. The lachrymal closely resembled in shape the corresponding bone in *Mesoplodon sowerbyi;* in these skulls it articulated anteriorly and externally with the preorbital process of the frontal, the malar, and the superior maxilla.

The mandible was absent in specimen *A*, only its anterior part was preserved in *B*, whilst in *C*, though both halves were present, the condyloid ends were much broken. In *C* the right and left halves were not ankylosed at the symphysis, which part of the bone was $4\frac{1}{2}$ inches long. In *B* the union between the two halves was complete, and the symphysis was $11\frac{1}{2}$ inches long.

During the time that the Challenger was in the harbour of Wellington, New Zealand, Mr Moseley visited the Wellington Museum, and made a careful comparison between the lower jaw and teeth of specimen *B*, and the jaw and teeth from the Chatham Islands preserved in that Museum, which have been described and figured by Dr Hector.

[1] Trans. Zool. Soc., vol. x., 1878.

[2] Trans. Roy. Soc. Edin., vol. xxvi., 1872.