any evidence of having been rolled or rubbed. They had evidently rested quietly in the spots where they had been deposited, and in many cases the tympanic and petrous bones were still attached to each other, although they could be separated by the exercise of but little force.

The sharks' teeth belonged to the genera *Carcharodon*, *Oxyrhina*, and *Lamna*, and are to be referred to no species, so far as we know, now living. They are identical with the sharks found in the Tertiary deposits. The question, therefore, naturally arises, Are the cetacean remains associated with them on the floor of the ocean the bones of existing or extinct forms? Of the resemblance of the greater number of these bones, more especially the tympanic bullæ, to existing genera, I have given a number of examples, and have occasionally had to point out how closely some of them correspond with existing species, so that they may be referred to them. But whilst these may be the bones of species still extant, there are others which present greater difficulties in the identification, so that, like the sharks, they may have belonged to animals which had lived in a previous geological epoch.

This observation will more especially apply to the undetermined bones found at the various stations in the central southern portion of the South Pacific Ocean. In none of these stations was the depth less than 14,000 feet, and in one (274) it reached 16,500 feet. From the position of these stations in mid-ocean, its floor in them is subjected, as Mr Murray has shown, to a minimum amount of deposition from above, so that but little change can have taken place in the ocean bed in these localities during a great period of time. The occurrence of the teeth of sharks, identical with known Tertiary species, lying so loosely on the ocean floor that they can be scraped up by the dredge, may show either that the sea bottom in these regions has remained unchanged, and with scarcely any appreciable gain from deposition since Tertiary times, or that some species of shark have continued to haunt these waters from the Tertiary down to the present period. In the former case, which other data render not improbable, the remains preserved may represent organisms existing during the Tertiary epoch, as well as animals which have lived and died in the ocean from that time to the present. From the peculiar circumstances of the case, therefore, animal remains, belonging to periods of time widely remote from each other, may be lying side by side in the same place on the sea bed, so that the association together of their remains may not necessarily imply that they were co-temporaneous. But if there has been, as seems not improbable in these very deep localities in mid-ocean, no appreciable geographical change since the Tertiary epoch, and if the food supply and the climatic conditions as regards ocean temperature have remained uniform, one sees no good reason why animals which lived in these seas during those remote times should not also be found there at the present day, if our knowledge of the oceanic fauna were complete. It may be precipitate, therefore, to pronounce the ear-bones, which we have not been able to refer to living species, to be those of extinct