

alents has yet been made, if, indeed, such a correlation is at all probable or possible. All that can be safely affirmed is that a succession among these beds can be traced with an increasing proportion of recent species in the younger parts of the series. Throughout the whole eastern Australia, including most of New South Wales and Queensland, no marine Tertiary fossils have been discovered. In the southwest of New South Wales and in Victoria, previous to the eruption of basalt-sheets and tuffs, an extensive series of conglomerates, siliceous sandstones, clays, iron-stones, and lignites was deposited in valleys and probably lake-basins. On the Dividing Range these strata rise to 4000 feet above the sea. At Bacchus Marsh in Victoria and elsewhere they have yielded leaves of *Laurus*, *Cinnamomum*, etc., some of which closely resemble species found at Oeningen. The general aspect of this flora is rather that of tropical than of extra-tropical Australia, and this indication of a warmer temperature than at present is corroborated by the occurrence of coral-reefs in Tasmania referred to the Miocene period. Above these plant-bearing beds which have been regarded as Lower Miocene or Upper Eocene, marine deposits supposed to be Middle and Upper Miocene occur on the flanks of the Dividing Range of New South Wales up to heights of 800 feet. In South Australia and Victoria extensive marine accumulations of clay, sand, and limestone, often underlying widespread basalt-plateaus, have yielded numerous foraminifera, especially at Mount Gambier and Murray Flats in South Australia; 40 species of corals, which are only slightly related to the living species of the surrounding seas, but include three European Tertiary species;⁵³ many echinoderms and polyzoa, and a large molluscan fauna, in which the genera *Waldheimia*, *Cucullæa*, *Pectunculus*, *Trigonia*, *Cypræa*, *Fusus*, *Haliotis*, *Murex*, *Mitra*, *Trivia*, *Turritella*, *Voluta*, etc., occur. The vertebrate organisms consist of fishes (including the world-wide genera *Carcharodon*, *Lamna*, *Odontaspis*, *Oxyrhina*), a few marsupials (*Bettongia*, *Nototherium*, *Phascalomys*, *Sarcophilus*), with some marine mammalia (*Squalodon*, *Arctocephalus*). In South Australia the older Tertiary deposits have been divided by Prof. Tate into four groups, which in ascending order are: (a) Inferior marine beds,

⁵³ Duncan, Q. J. Geol. Soc. 1870, p. 313. See also the papers of R. Tate, F. M'Coy, J. E. Tennison Woods, R. Etheridge jun., F. von Müller, Ettingshausen and R. M. Johnston.