florigemma, C. Blumenbachii, Apiocrinus Meriani. (b) Pterocerian, with Amm. acanthicus, Pterocera oceani, P. ponti, Nerinea depressa, Waldheimia humeralis. (c) Virgulian, with Gryphwa virgula, Trigonia gibbosa, Terebratula diphya, Pholadomya multicostata, Thracia depressa. (d) Bolonian, with Amm. gigas, A. suprajurensis, A. biplex, Trigonia incurva, Cyprina Brongniarti.

(2) Portlandian or Tithonian. (a) Portlandian or Nerinean, Amm. gigas, Trigonia gibbosa, Gryphwa virgula, Ostrea solitaria, Lucina Portlandica, Nerinea trinodosa, Pterocera oceani. (b) Purbeckian, with Corbula inflexa, C. Forbesiana, Cardium Purbeckense, Terebratula diphyoides, Hemicidaris Purbeckensis, Astræa distorta, Insects, Mammals.

The *Tithonian* group in the eastern Alps includes a coral limestone near Salzkammergut, and the Diphya limestone abounding in *Terebratula diphya*; also *Aptychus* beds; and some of the limestones contain many Ammonites, *Phylloceras ptychoicum*, and others.

The Jurassic beds of Cutch, in India, contain, in the Lower Oölyte, Astarte compressa, Corbula pectinata, Rhynchonella concinna; in the Middle Oölyte, Amm. (Stephanoceras) macrocephalus, A. (Peltoceras) athleta, Terebratula biplicata, T. sella, and many other Ammonites, many Belemnites, etc.; in the Upper Oölyte, Amm. (Phylloceras) ptychoicus, and many other species. Also many species of plants, as Sphenopteris arguta, Alethopteris Whitbyensis, Otozamites contiguus. The Portlandian beds afford Trigonia Smeei and T. ventricosa, the latter also a South African species; also jaw of a Plesiosaur.

The Upper Jurassic of the Zanskar area in the central Himalayas has afforded Belemnites clavatus, Ammonites macrocephalus, A. Parkinsoni, A. biplex, Trigonia costata, and other species. The Hundes area in the Tibetan Himalayas also has many Jurassic species. (Cf. Medlicott and Blandford, Geology of India, vols. i. and ii., 1879, and second edition by Oldham, 1894.)

In western Australia, 20 species of Liassic and Oölytic fossils are identical with British species: 3 of the Ammonite group, Nautilus semistriatus and Gresslya donaciformis of the Upper Lias; Myacites Liassinus of the Middle Lias; and 2 of the Ammonite group, with Belemnites canaliculatus, Cucullar oblonga, Pholadomya ovulum, Avicula Münsteri, A. echinata, Pecten cinctus, P. calvus, Lima proboscidea, L. punctata, Ostrea Marshii, Rhynchonella variabilis, Cristellaria cultrata, of the Oölyte (C. Moore).

CONTINENTAL RESEMBLANCES AND CONTRASTS IN THE TRIASSIC AND JURAS-SIC PERIODS; CLIMATE.

The Triassic formation is alike over a large part of Europe and America in kinds of rocks, in paucity of fossils, and in evidences of shallow-water origin, and of largely brackish water, if not fresh. The continental surface in each case was very near or above the water level over large areas; and it oscillated between brackish or fresh-water flats and barren or half-barren salt-water flats or sea-border salt-pans. The European exception is in the Mediterranean region. Not only is this general fact true for the two continents mentioned, but also for India, South Africa, and Australia, or the continental regions in the opposite hemisphere. This so general prevalence over large parts of the continents of slight submergence, too slight for abundant remains of marine life, — although this life must undoubtedly have been as profuse in kinds as in any earlier or later era, — indicates general and synchronous movements in the earth's surface, and correlate progress in continental growth. The Jurassic period was, in contrast, a period of somewhat deeper and clearer seas, sustaining at many levels abundant life,