2. UPPER MIOCENE.

LOUP FORK GROUP. — (1) *Deep River beds.* (Ticholeptus beds.) — **Ungulates:** *Miohippus, Desmatippus*, Anchitherium, Protohippus, Aphelops,* MASTODON.

(2) *Nebraska beds* or *Loup Fork proper.* — **Rodents:** STENEOFIBER, *Sitomys* (*Hesperomys*), *Hystricops, Palæolagus, Panolax.* **Edentates:** *Caryoderma.* **Ungulates:** *Chalicotherium, Pliohippus, Protohippus,* HIPPARION, *? Tapiravus, Aphelops, Teleoceras;* Artiodactyl Ungulates, *Merychyus, Merycochœrus, Protolabis, Procamelus, Platygonus, Pliauchenia,* BLASTOMERYX, *Cosoryx.* **Proboscideans:** MASTODON. **Carnivores:** ? CANIS! *Ælurodon,* PSEUDÆLURUS, MACHÆRODUS, STENOGALE, *Brachypsalis.*

PLIOCENE.

1. *Palo Duro beds.* — **Rodents:** *? Arctomys, ? Geomys.* **Ungulates:** *Protohippus, Equus!, Hippidium, Aphelops;* Artiodactyl Ungulates, large Camel, probably *Pliauchenia.* **Proboscidean:** *Mastodon.*

2. *Blanco beds.* — **Edentates:** *Megalonyx.* **Ungulates:** EQUUS!; Artiodactyl Ungulates, *Platygonus, Pliauchenia.* **Proboscidean:** MASTODON. **Carnivores:** *Canimartes, Borophagus,* ? FELIS!

The preceding list of genera has been prepared for this place, for the most part, by W. B. Scott.

The more important publications on North American Tertiary Mammals and their historical relations, are those of Leidy on the Mammalian Fauna of Dakota and Nebraska (1869), and other memoirs; Marsh, on the Introduction and Succession of Vertebrate life in America (1877), and his many earlier and later papers; Cope, on horizons of Extinct Vertebrates (1878), on the Origin of the Fittest (1887), and his other various publications; H. F. Osborn, on The Rise of the Mammalia of North America (1893), and other memoirs; and papers by W. B. Scott.

FOREIGN.

Notwithstanding the catastrophe that produced over the continental seas the wide exterminations of species which closed Mesozoic time, Europe in the earlier part of the Tertiary era was much like Europe of the Cretaceous period. In the interval there had been emergencies and a widening of the areas of dry land; yet nearly half the continent south of the parallel of 55° remained under salt water, or was barely emerged. There were frequent oscillations during the progress of the Eocene; but in its later part the sea had great extent over southern Europe, covering, in part, the sites of the chief mountain ranges and spreading largely over Asia. Great Britain was still continuous with Europe, and the London-Paris basin was one of the large local seas; but that basin had narrowed limits in southeastern England and also in France. After the Eocene the conditions were changed by the making and partial elevation of the Pyrenees and large emergencies elsewhere, but part of the region of the Alps and Juras was still producing rocks for the finishing of the mountains.

The contrast with Tertiary North America was great. There was no localized sea-border belt of accumulating deposits; and what it had of interior lakes were estuarine or lacustrine in alternation with marine conditions.