

tiary series. They are shown by Fuchs to form part of the Pliocene series of Attica, and lie in the highest part of that series.

Samos.—In an irregular deposit of gravels, sandstones, and marls in the island of Samos, Dr. Forsyth Major has discovered a large assemblage of vertebrate remains of an age similar to that of the Pikermi strata. Among the fossils obtained by him are many of the same species as are found at the Greek locality, such as *Promephitis Larteti*, *Mustela palæattica*, *Lycyæna Chæretis*, *Ictitherium robustum*, *I. hipparionum*, *Ancylotherium Pentelici*, *Mastodon Pentelici*, *Rhinoceros pachygnathus*, *Hipparion mediterraneum*, *Sus erymanthus*; seven antelopes, *Palæoreas Lindermayeri*, *Gazella brevicornis*, *Palæoryx Pallasii*, and two others. Besides these, there are some half dozen antelopes of African types, and true edentates, *Orycteropus Gaudryi*, *Palæomanis Neas*, a new genus of gigantic ruminants, *Samotherium*, belonging to the family of the giraffes, and recalling the *Heladotherium* of Pikermi, and an ostrich (*Struthio Karatheodoris*).¹¹⁶

India.—Not less important than the massive Pliocene accumulations of the Mediterranean basin, are those which have been found in Sind, the Punjab, and other northwestern tracts of India. In Sind, the noteworthy fact has been made out by the Indian Geological Survey that, from the Upper Cretaceous to the Pliocene beds, the whole succession of strata, with some trifling local exceptions, is conformable and continuous; yet contains evidence of alternations of marine and terrestrial conditions, the latest marine intercalations being of Miocene date. The upper division of the Manchhar group (p. 1644) is not improbably referable to the Pliocene period. It consists of clays, sandstones, and conglomerate, 5000 feet thick, which have yielded some indeterminate fragmentary bones. Similar strata cover a vast area in the Punjab. They are admirably exposed in the long range of hills termed the Sub-Himalayas, which from the Brahmaputra to the Jhelum, a distance of 1500 miles, flank the main chain, and consist chiefly of soft massive sandstone, disposed in two parallel lines of ridge, having a steep southerly face and a more gentle northerly slope, and separated by a broad flat valley. These strata, with an aggregate thickness of between 12,000 and 15,000

¹¹⁶ *Compt. Rend.* 31st Dec. 1888; 1891, pp. 608, 708.