

dimensions of the common hedgehog or the squirrel. On this subject Dr. Falconer observes, that in the Miocene freshwater deposit of Seissan, in the Department of Gers, near the Pyrenees (so well explored by M. Lartet), there is a layer in the marginal part of the basin in which the bones of diminutive mammalia, such as shrews and others, are mixed with remains of frogs in profusion; while in a more central part of the same basin, entire carcasses of the *Mastodon* and other huge animals occur. In like manner the thin layer No. 93 in Purbeck may represent the shallow margin of a river, lake, or lagoon, in the deeper parts of which fossil animals of greater size may be preserved.

On a review of all the fossils collected by Messrs. Brodie and Beckles, including the original *Spalacotherium*, together with a lower jaw belonging to the Rev. P. B. Brodie, and communicated to me by Prof. Owen, it appears that we now possess (March 14th) the evidence of about fourteen species of mammalia from the Middle Purbeck, to say nothing of numerous remains of the highest osteological interest, respecting which no opinion can be hazarded until they have been studied more in detail. They belong to eight or nine genera, some insectivorous or predaceous, others having affinities as yet doubtful, and one of a purely herbivorous type, allied to the Kangaroo-rat of Australia. Some of the predaceous species were marsupial, some of them, in the opinion of Dr. Falconer, probably placental.

As all of them have been obtained from an area less than 500 square yards in extent, and from a single stratum not more than a few inches thick, we may safely conclude that the whole lived together in the same region, and in all likelihood they constituted a mere fraction of the mammalia which inhabited the lands drained by one river and its tributaries. They afford the first positive proof as yet obtained of the co-existence of a varied fauna of the highest class of vertebrata with that ample development of reptile life which marks all the periods from the Trias to the Lower Cretaceous inclusive, and with a gymnospermous flora, or that state of the vegetable kingdom when cycads and conifers predominated over all kinds of plants, except the ferns, so far at least as our present imperfect knowledge of fossil botany entitles us to speak.

The annexed table will enable the reader to see at a glance how conspicuous a part, numerically considered, the mammalian species of the Middle Purbeck now play when compared with those of other formations more ancient than the Paris gypsum, and at the same time it will help him to appreciate the enormous hiatus in the history of fossil mammalia, which at present occurs between the Purbeck and Eocene Periods.*

* In drawing up this table I have been assisted by Professor Owen, in reference to the British, and by MM. Lartet and Hébert in reference to the fossil mammalia of the French Eocene strata. There are, besides, several undescribed species in the collection of the two last-mentioned paleontologists, or in museums known to them; and in regard to one or two of the Eocene continental localities out of the Paris basin, the age of the deposits is too little known to allow us to include their fossils in the Table.