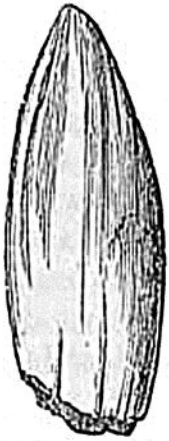


fig. 132. In both these specimens part of the substance of the jaw has been broken open, so as to show the permanent false molar ( $\alpha$ , fig. 131) concealed in the socket. From the fact of this molar not having been cut, we learn that the individual was young, and had not shed its first teeth. In fig. 133, a front tooth of the same species of kangaroo, is represented.

Fig. 133.



Incisor of *Macropus*.

Whether the breccias, above alluded to, of the Wellington Valley, appertain strictly to the Pliocene period cannot be affirmed with certainty, until we are more thoroughly acquainted with the recent quadrupeds of the same district, and until we learn what species of fossil land shells, if any, are buried in the deposits of the same caves.

The reader will observe that all these extinct quadrupeds of Australia belong to the marsupial family, or, in other words, that they are referable to the same peculiar type of organization which now distinguishes the Australian mammalia from those of other parts of the globe. This fact is one of many pointing to a general law deducible from the fossil vertebrate and invertebrate animals of the eras immediately antecedent to the human, namely, that the present geographical distribution of organic forms dates back to a period anterior to the creation of existing species; in other words, the limitation of particular genera or families of quadrupeds, mollusca, &c., to certain existing provinces of land and sea, began before the species now contemporary with man had been introduced into the earth.

Mr. Owen, in his excellent "History of British Fossil Mammals," has called attention to this law, remarking that the fossil quadrupeds of Europe and Asia differ from those of Australia or South America. We do not find, for example, in the Europæo-Asiatic province fossil kangaroos or armadillos, but the elephant, rhinoceros, horse, bear, hyæna, beaver, hare, mole, and others, which still characterize the same continent.

In like manner in the Pampas of South America the skeletons of *Megatherium*, *Megalonyx*, *Glyptodon*, *Mylodon*, *Toxodon*, *Macrauchenia*, and other extinct forms, are analogous to the living sloth, armadillo, cavy, capybara, and llama. The fossil quadrumana, also associated with some of these forms in the Brazilian caves, belong to the *Platyrrhine* family of monkeys, now peculiar to South America. That the extinct fauna of Buenos Ayres and Brazil was very modern has been shown by its relation to deposits of marine shells, agreeing with those now inhabiting the Atlantic; and when in Georgia in 1845, I ascertained that the *Megatherium*, *Mylodon*, *Harlanus americanus* (Owen), *Equus curvidens*, and other quadrupeds allied to the Pampean type, were posterior in date to beds containing marine shells belonging to forty-five recent species of the neighboring sea.

There are indeed some cosmopolite genera, such as the *Mastodon* (a genus of the elephant family), and the horse, which were simultaneously represented by different fossil species in Europe, North America, and