STUDIES IN TASMANIAN MAMMALS, LIVING AND EXTINCT.

Number VII.

By

H. H. Scott, Curator of Victoria Museum, Launceston,

and

Clive Lord, F.L.S., Curator of Tasmanian Museum, Hobart.

(Read 20th March, 1922.)

A NOTE ON THE TURBINOID CELLS AND ALLIED DATA OF *NOTOTHERIUM MITCHELLI.*

When treating the skull of *Nototherium mitchelli* to extract the iron, and so render it fit for future preservation, we carefully set aside the whole of the mud that came from the nasal cavity, intending later on to search for fragments of the turbincid bones. After considerable expenditure of time upon the unpromising mass, we are now able to report the recovery of about one half of one of the maxillo turbinals, and herewith record the following facts. In structure the texture is about twice the degree of coarseness that obtains in the living Kangaroos, but its general structure is akin to the turbinal of a Wombat, and departs considerably in outline from both that of the Kangaroo and the Native Bear. The central laminæ of these Nototherian bones were very extensive, and reached the vomer and palate by two vertical plates, that pressed against the premaxillaries outwardly, and the nasal septum mesiad. The edges of the premaxillaries, in these skulls, curve into the nasal cavity in two looplike folds, quite unlike anything found in the skulls of allied Marsupials; and the walls of the nasal cavity are not bulged outwards, at the roots of the zygomatic arches, as we find in the skulls of Wombats, but slope straight backwards, all of which means a relatively narrower turbinoid surface, but a vertically deeper one.

The region which, in the Kangaroos, gives rise to a nasal spine (elaborated out of the premaxillary)—that reaches a maximum development in the extinct giant *Palor-*

chestes—is an open channel in the Wombat, and a solid platform in the *Nototheria*, which pushed the turbinals relatively farther back, the total result being as follows:—

1. In being straighter, and more cuneiform in shape, the maxillo turbinals of the *Nototheria* approach those of the Kangaroos, and depart from those of the Wombats.

2. By reason of their more extensive vertical plates, they approach the Wombats, and depart from those of the Kangaroos.

3. By being preceded by a bony platform, the Notothierian turbinals manifest characters of their own, although such states are dimly suggested in the skulls of Native Bears.

A suggestion thrown out in the Monograph upon *Nototherium tasmanicum* (p. 46) as to the existence of nasal diverticula in the *Nototheria*, has been recalled by Doctor William K. Gregory's studies upon the American *Titanotheres*, and his recent examination of their Australian marsupial analogues, the *Nototheria*. Doctor Gregory concludes that nasal diverticula did exist in both groups of animals. Again, the very perfect skull of *Nototherium mitchelli*, now available to students of palæontology, makes it possible to see how the hinged nasal cartilage and enormous zygomaticus muscles (that strained up the angles of the lips with inordinate power) rendered a relatively small effort upon the part of the levator labii superioris muscles effective in pulling up the heavy trunk-like lip.

The attachment and action of the muscles just named were clearly demonstrated in the Indian Rhinoceros as early as the year 1851 by Sir Richard Owen, and there can be no doubt that he carried this idea in the foreground of his mental vision when he came to study the *Nototheria*, but being diverted from his first thought by a too close association of the teeth of Diprotodons with those of *Dinotherium*, he dispatched the Rhinoceros aspect of the *Nototheria*, and their allies, with a minor reference.

Owen's actual sketch of the myology of the Rhinoceros is before us, and the more we study his work upon the Rhinoceros and the *Nototheria*, the more we are convinced he strongly leaned to a belief respecting the Rhinoceros-like habits of *Nototherium mitchelli*—but awaited in vain the coming of a perfect skull to prove his case.