	cm.
Total length of the specimen as preserved	23·8
Length of the symphysis	8·6
Depth of the ramus opposite the hinder end of the symphysis ...	5·5
Depth of the ramus beneath m. 2	5·8
Depth of the ramus beneath m. 3	5·7
Transverse diameter of the canine alveolus (approximate)	2·0
Antero-posterior diameter of the canine alveolus (approximate) ...	2·7

Dimensions of the teeth:

	Length.		Width.
p.m. 2	23 mm.	...	11 mm.
p.m. 3	26 ,,	...	13 ,,
p.m. 4	26 ,,	...	13 ,,
m. 1	21 ,,	...	10 ,,
m. 2	28 ,,	...	14 ,,
m. 3	34 ,,	...	17 ,,

This animal closely resembles *Pterodon dasyuroides*, De Blainville, described and figured in detail by Filhol and Gervais, and may be referred to the same genus. On the other hand, its large size entitles it to specific distinction, and the name *Pterodon africanus* may be suggested for it.

II.—On the Structure of the Palate in the Primitive Theriodonts.

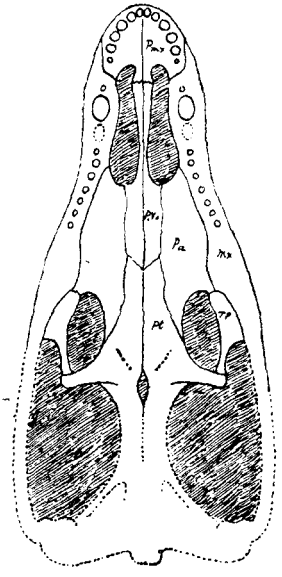
By R. Broom, M.D., B.Sc., C.M.Z.S.

FOR some years it has appeared to me that in the Order Theriodontia as generally accepted there were included a number of forms not at all nearly related to the typical genus, *Galesaurus*, and in a number of papers I have referred to these as 'Primitive Theriodonts.' The best known genera are *Ælurosaurus* and *Ictidosuchus*, but as in neither of these have the details of palatal structure been very clearly made out, it has been impossible to say how far they differed from the typical Theriodonts.

Having recently, at the request of Mr. W. L. Sclater, made an examination of some of the reptilian fossil remains in the South African Museum, I came across one or two interesting small Theriodont skulls that had been for many years in the Museum. These will be described in detail in the *Annals* of the Museum; but as one of the skulls, when developed, shows the almost perfect palate, I have thought it advisable to issue this short note on the subject, as the discovery fills a most important gap in our knowledge.

The little skull which bears some resemblance to *Ælurosaurus* I have named *Scylacosaurus Sclateri*. While there is nothing remarkable about the structure of the skull as viewed from above or the sides, the dentition is interesting. In each premaxillary bone there are six incisors, of which the last is very small. Each maxillary has a large tooth near the front, which is evidently a canine. It is not, however, the first of the maxillary teeth, as in front of it, and undoubtedly implanted in the maxillary bone, is a small pointed tooth. I regard this minute tooth as the 1st canine and the large tooth as the 2nd canine. There is evidence of a third

tooth, as yet immature, as large as the second, and which I regard as the 3rd canine. Behind the 3rd canine are seven small simple molars. A minute canine in front of the large canine is figured by Owen in *Gorgonops*, and it also occurs in another genus (*Ictidosaurus*), which I am describing.



Restoration of Palate of *Scylacosaurus Selateri*. × ·45.

Mx, maxilla; *Pa*, palatine; *P.mx*, premaxilla; *Pt*, pterygoid; *P.vo*, prevomer; *T.p*, transpalatine.

The palate is quite unlike that of *Galesaurus* and *Cynognathus*, and is only a slight modification of that found in the Rhynchocephalians and most other primitive reptiles. It will be more readily understood by reference to the Figure than by description. The internal nares are situated well in front, and divided by the paired 'vomers,' or, as they perhaps had better be called, prevomers. These prevomers are of considerable size and form a large part of the hard palate, and articulate posteriorly with the pterygoids. The palatines articulate with the maxillaries along a line a little to the inside of the molar teeth, and partly enter the posterior border of the internal nares. The pterygoids are of large size. In front they pass forwards between the palatines to meet the prevomer, and form a large part of the hard palate. They have well-developed transverse processes, which are supported by rather slender transpalatines or ecto-pterygoids. The posterior part of the palate is unknown, but is probably as restored in the Figure.

As the palate of *Scylacosaurus* and its allies differs so very greatly from that of the typical Theriodonts I have proposed to constitute

a new order — the Therocephalia — for the primitive Theriodonts. There are many other points of difference between the two groups which I have dealt with in the paper above referred to.

Not improbably the Theriodonts proper are descended from the Therocephalians, but the gap between the two is probably as great as between Parasuchians such as *Phytosaurus* and the Crocodiles.

III.—On the Lower Jaw of a small Mammal from the Karoo Beds of Ariwal North, South Africa.

By R. Broom, M.D., B.Sc., C.M.Z.S.

IN the collection of Mr. Alfred Brown, of Ariwal North, which I had recently the pleasure of looking over, I came across the right lower jaw of a small mammal which Mr. Brown had discovered in sandstone near Ariwal. Though unfortunately the teeth are lost, there is evidence of there having been a large canine. The most remarkable character of the jaw is its extreme shortness, and in its general proportions it agrees much more with the jaws of some of the small carnivorous Eutherians than with those of the small carnivorous or insectivorous genera already known from the Secondary rocks. The angle is well developed and but very slightly inflected. The condyle is practically in a line with the alveolar margin.

Lower Jaw of *Karoomys Browni*. Nat. size.

In the absence of the teeth it is impossible to say much regarding the affinities of the genus. It is not improbable, however, that it is a member of the primitive mammalian group which gave rise to the Marsupials on one hand and the Eutherians on the other. Its nearest known allies are probably to be found among the Jurassic forms such as *Diplocynodon* or *Docodon*.

I propose to call the new form *Karoomys Browni*, after the discoverer, who has already enriched science by the discovery of so many new forms.

IV.—The Minerals of some South African Granites.[1]

By F. P. Mennell, F.G.S., Curator of the Rhodesia Museum, Bulawayo.

PLUTONIC rocks of acid composition are very extensively developed in Africa south of the Equator. These rocks present many features of interest, and, especially under the microscope, many minerals may be recognized besides the usual quartz, felspar, and ferromagnesian constituents. Thus the granite

[1] Read before the South African Association for the Advancement of Science, April 28th, 1903.