

Article XXXVII.—ON SOME NEW CARNIVOROUS THERAPSIDS.

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Lycognathus ferox gen. et sp. nov.

This new genus and species is founded on a badly weathered skull discovered by me at Winnaarsbaken, Burghersdorp, S. Africa. Most of the upper side of the skull is weathered away, and the bone of the sides of the head so brittle that development is difficult and suture difficult to make out. Still as the lower jaws are in position and the majority of the teeth of the upper jaw preserved the specific characters can be satisfactorily made out.

The skull is intermediate in size between that of *Cynognathus crateronotus* and *Cynognathus platyceps* and differs from all the known species of *Cyno-*

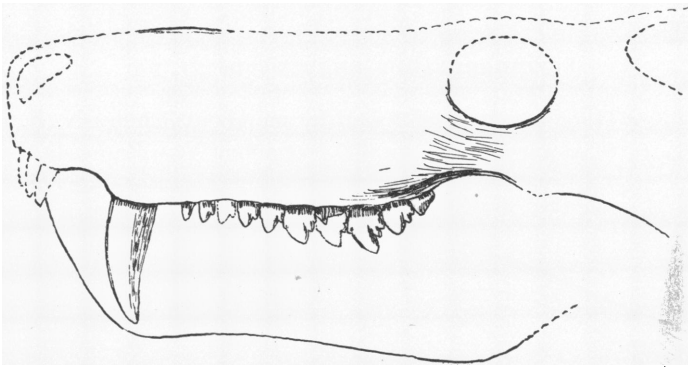


Fig. 1. Side view of skull of *Lycognathus ferox*. $\times \frac{1}{3}$.

gnathus in having 3 incisors instead of 4, and 10 molars instead of 9, and it is for this reason that I place it in a new genus. The teeth however resemble those of *Cynognathus* so closely that there can be no doubt the two genera are very nearly allied.

The skull measures about 285 mm. in length as compared with 400 mm. in *Cynognathus crateronotus*, and the greatest width was probably about 190 mm. The orbits are relatively small measuring about 40 mm. in diameter, and are directed more upwards than in *C. crateronotus*. The pineal foramen which in *Cynognathus* is very small is in this new form of fair size.

The following table gives a comparison of the molars of *Cynognathus crateronotus* with those of *Lycognathus ferox*.

<i>Cynognathus crateronotus</i>			<i>Lycognathus ferox</i>	
	Length	Height	Length	Height
1st molar	5.3	8	4.5	6
2nd molar	5.5	9	5	—
3rd molar	about 7.5	9	—	—
4th molar	10	10	7.5	7
5th molar	8.5	10	9	about 6
6th molar	about 12	about 13	11.5	9
7th molar	14	13	12	10
8th molar	16	about 14	13	12
9th molar	15	about 10	13	10
10th molar			about 7.5	about 5

I have given these detailed tooth comparisons to show that there is no possibility of this specimen being a young *Cynognathus crateronotus*. The large size of the 5th molar as compared with the 5th in *C. crateronotus* suggests the possibility of the tooth in *Lycognathus* being a deciduous molar, but this is pretty certainly not the case as there is no evidence in the jaw of a replacing tooth, and there is no doubt that the skull is that of a fully mature form.

***Scymnognathus angusticeps* sp. nov.**

This new Gorgonopsian was found by me about 3 miles N. E. of New Bethesda, C. C. at a level of about 600 feet above New Bethesda township.

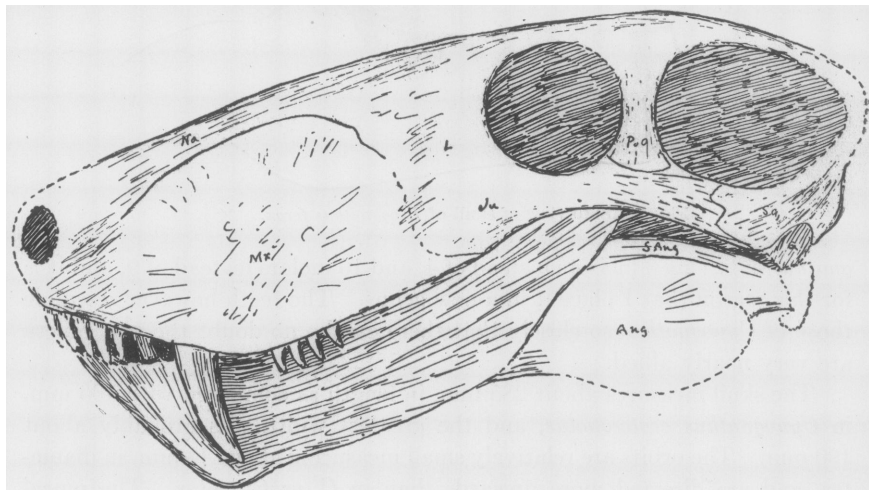


Fig. 2. Side view of skull of *Scymnognathus angusticeps*. $\times \frac{2}{3}$.

Only the skull was present in the rock, but this fortunately except for some degree of crushing is nearly perfect. From *Scymnognathus tigriceps* which

comes from a horizon probably 1000 ft. lower it differs in being smaller and in having the skull relatively much longer and more slender. Not improbably it may belong to a different genus, but it certainly is a near ally of *Scymnognathus tigriceps*, and until further evidence is obtained may provisionally be placed in the same genus. It is very distinct specifically.

The most striking characteristic of the species is the great length of the preorbital portion of the skull which is more than half the length of the skull. The orbit is large and the temporal fossa relatively small, in fact not much larger than the orbit. As in *S. tigriceps* the squamosal only forms about half of the zygoma.

The frontal region is narrower than in most Gorgonopsians. The frontal bones form a considerable part of the orbital margins, and extend back by the sides of the parietals as far as the pineal foramen in a manner very similar to that seen in *Dicynodon*. The preparietal is very small. The pineal foramen is of moderate size.

The lower jaw has the deep symphyseal portion characteristic of the genus, but the rest of the jaw is unusually long and slender.

The following are the chief measurements of the skull:

Greatest length.....	300 mm.
Preorbital length.....	170 "
Canine to last molar inclusive.....	57 "

***Scymnognathus minor* sp. nov.**

This new species is founded on a badly weathered and crushed skull with much of the skeleton of a medium sized Gorgonopsian found by me at New Bethesda. The horizon at which it was found is about 600 ft. lower than that which yielded *Scymnognathus angusticeps*. The two forms are closely allied and there is little doubt that both belong to the same genus.

Besides being smaller there are a number of differences in proportion. The line of the border of the premaxilla slopes much less up than in *S. angusticeps* and the incisors are narrower and longer.

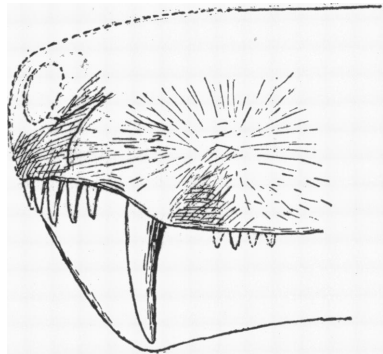


Fig. 3. Side view of snout of *Scymnognathus minor*. $\times \frac{2}{3}$.

The following is a comparison of tooth measurements:—

	<i>S. augusticeps</i>	<i>S. minor</i>
Length of incisor series.....	40 mm.	33 mm.
From front of canine to last molar.....	55 "	48 "
Length of molar series.....	28 "	21 "
Entire dental series.....	110 "	95 "

***Ictidorhinus martinsi* gen. et sp. nov.**

This new genus and species is founded on an almost perfect skull of a small Gorgonopsian of very remarkable type. It was discovered at Wilgebosch by Mr. J. H. Martins who was my companion during one or two fossil hunting tours and I have much pleasure in associating his name with the find.

The locality where the find was made must be very nearly the top of the

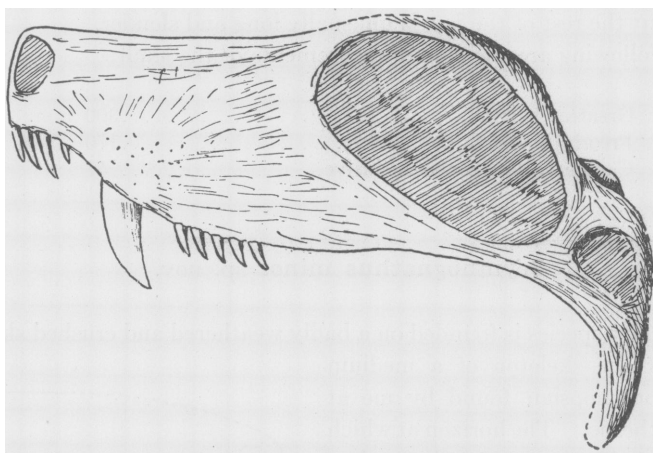


Fig. 4. Side view of skull of *Ictidorhinus martinsi*. Nat. size.

Cistecephalus zone being about 1000 feet above the horizon of New Bethesda and not far below the thick bed of sandstone which probably divides the *Cistecephalus* zone from the *Lystrosaurus*.

The skull is quite unlike that of any previously known Therapsid. It is one of the smallest of the Gorgonopsians yet found being only 95 mm. in greatest length. The snout is narrow and very mammal-like with the nostrils practically terminal. The premaxilla is small with 4 slender sharp pointed teeth. The septomaxilla if present must be very small. There is a small piece of bone that may be septomaxilla but it is by no means certain.

The maxilla is of fair size with a large canine and 5 fairly large molars. It is difficult to make out the sutures on the side of the skull owing to crushing.

The prefrontal is very large and forms the anterior and upper part of the orbit. On the upper side of the skull the two most striking characteristics are the very remarkable supraorbital developments and the peculiar way in which the pineal foramen is elevated above the general level. It is difficult to be certain how much of the supraorbital development is due to frontal and how much to postfrontal but I think the greater part is postfrontal, though a small part is most probably frontal. This supraorbital development is composed of thickened spongy bone and the surface has grooves for blood vessels suggesting that there was a horny covering. The frontals appears to pass back as far as the pineal foramen in much the same way as in *Scymnognathus*. The preparietal though relatively larger than in *Scymnognathus* is a small bone. The pineal foramen is of fair size and is remarkable that it stands out from the general surface of the bone like a little Flamingo's nest. The parietals are small. The interparietal is large. I fail to identify a distinct tabulare but it must be admitted that the condition of the sides of the occiput are not very satisfactory.

The plate is fairly complete but crushed. It is of the ordinary Gorgonopsian type so far as can be made out. In front there is a single vomer with a rather broad palatal portion which has a median groove on its palatal surface but no indication of any median suture. A fracture across the snout behind the last molar shows that the vomer has a very slender median plate which ascends from the lower portion half way to the nasal. At the upper edge it is deeply groove. There is no evidence of the vomer being double though possibly it may be two prevomers fused. I have failed to find any teeth on the palate.

