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Preliminary report on two Triassic dicynodonts from Zambia.

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PRELIMINARY REPORT ON TWO TRIASSIC DICYNODONTS FROM ZAMBIA.

by

E. A. Crozier.

INTRODUCTION

The purpose of this communication is to establish the presence of a species of Stahleckeriid, hitherto known only from India, in the Zambian Triassic N'tawere Formation and to establish the new specific name of the *Kannemeyeria* specimen also recorded from the same locality.

The skulls and some post-cranial material of these two dicynodonts were collected by Mr. James Kitching from the Luangwa Valley, Zambia in 1961. The material comes from Locality 16, of the Lower Fossiliferous Horizon in the N'tawere Formation. One large skull has been assigned to genus and species *Rechnisaurus cristarhynchus* Roy Chowdhury, 1970. The other skull and the postcranial material has been named *Kannemeyeria latirostris* sp. nov. One other specimen has been described from this locality, *Diademodon rhodesiensis* (Brink 1963), which marks it as being of near *Cynognathus*-zone age.

Rechnisaurus cristarhynchus **Roy Chowdhury**
Field No. 3638.
Museum No. 421 Bernard Price Institute for Palaeontological Research. (Figs. 1-5.)

Material—Large skull, 62 cm long. Badly weathered and distorted. Intertemporal bar, top of occiput, entire right orbital region and most of left zygomatic arch missing. Complete lower jaw, 32 cm long.

Diagnosis.
Skull forms a triangle in dorsal view. Large canine tusks with strong maxillary processes. Wide snout and interorbital region. Mid-nasal ridge and shallow depressions on either side extending from the tip of the snout to the interorbital region. No postfrontal. Preparietal with low boss in front of pineal foramen. Temporal vacuity short and broad. Jugal extends most of the length of the zygomatic arch. Short premaxilla. Septomaxilla forms posterior wall and floor of nostril. Distinct ectopterygoid. A small boss consisting of part of the epipterygoid fused to the pterygoid, behind the pituitary foramen. Palatal surface of the maxilla with three parallel grooves,the central one running into the vomerine ridge. The two anterior ridges meet the ridge around the rim of the premaxilla. Moderate-sized labial fossa at the junction of the maxilla, pterygoid and jugal. Maxilla enters the internal narial passage. Palatine extends the entire length of the pterygoid ramus to meet the maxilla. Interpterygoid space 1,6 cms long, internal nares space 10,4 cms long. Low broad occiput. Deep quadrate fossa on anterior face of occiput.

Lower jaw with massive dentary. Deep central and shallow lateral grooves on dorsal surface of dentary. Surangular with short lateral face. Splenial with mesial face only. Long S-shaped Meckel's fossa. Reflected lamina of the angular meets the horizontal flange of the lateral condyle leaving an oval opening dorsally between the angular and reflected lamina. Long broad shallow condyle allowing longitudinal and lateral movement of the jaws.

Discussion.
This specimen agrees in all particulars with the type except for its size and the shape of the snout. It is thought that the blunt snout of the type (Roy Chowdhury 1970, Figs. 1-3) is due to a fracture or erosion, notwithstanding a definite statement to the contrary by Dr. P. L. Robinson (personal communication). For example, the palatal ridges of the type are not bounded anteriorly by any marked rim, as they are in the specimen here (Fig. 2) and which is the more normal condition.

The specimen described here is important in that it adds a number of details of skull morphology to those already noted by Roy Chowdhury for the type. In particular, it has an almost complete lower jaw, the reflected lamina of which is in a peculiar relation to the lateral condyle of the articular complex.

Kannemeyeria latirostris **sp.nov.**
Field No. 3636.
Museum No. 420 Bernard Price Institute for Palaeontological Research. (Figs. 6-11.)

Material. Small juvenile skull 25,5 cm long. Badly sun-cracked and distorted about a traverse fault. Parietal crest and top of occiput worn away, squamosal wings broken off. Dorso-ventrally flattened. Complete lower jaw, 20 cm long.

Specific Diagnosis.
Skull of Kannemeyeriid type with relatively broad snout. Short premaxilla. Large pineal foramen in a shallow pit below parietal crest. Oval preparietal in

front of it. Postorbitals extend almost the entire length of the intertemporal bar on either side of the parietals. Interparietal with large dorsal face meets the parietals near the end of the intertemporal bar. Zygomatic arches sub-parallel. Short jugal extending from lachrymal to postorbital bar. Frontals form only a short part of dorsal border of orbit. No lateral roof to temporal vacuity on intertemporal bar. Palatal surface of premaxilla with three grooves. The two anterior ridges meet the ridge around the rim of the premaxilla at right angles. The maxillae rise steeply on either side of the premaxilla, and are drawn out into small lateral flanges. Small tusks. No ectopterygoids. Maxillae enter border of internal nares. Medium sized labial fossa. Palatines extend farther anteriorly than the pterygoids. Small interpterygoid space. No tabulars. Large posterior temporal foramen. Small horizontal stapes.

Lower jaw with very short symphysis. Three parallel grooves on dorsal surface. Anterior extension of the angular spliced between the dentary laterally and splenial mesially. Reflected lamina of the angular far back on the shaft of the angular. Long shallow condyle, somewhat restricted laterally. The specific name records the very broad snout region.

Discussion.

This specimen clearly is a member of the genus *Kannemeyeria,* but differs from the other known species in the broadness of the snout, the lack of any marked ridging on the snout and extreme shortness of the symphysis of the dentary. The tusks are more vertically orientated and there are no pronounced horizontal lateral flanges to the maxillae. In addition, it has an extremely low interpterygoid space–internal narial ratio and the interparietal is apparently exposed to a greater extent at the back of the intertemporal bar than might be expected in a species of *Kannemeyeria* (Cruickshank 1970). Some of these differences might be accounted for by reason of its small size and possible youth at death, but as the N'tawere formation is generally accepted as being slightly higher in the succession than the *Cynognathus* zone, a different species of *Kannemeyeria* is not altogether unexpected here.

Additional studies will be carried out on these two specimens and recorded at greater length at another time.

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BRINK, A. S., 1963. Two cynodonts from the N'tawere Formation in the Luangwa Valley of Northern Rhodesia. *Palaeont. afr.,* 8, 77-96.

CRUICKSHANK, A. R. I., 1970. The taxonomy of the anomodont genus *Kannemeyeria* Seeley 1908. *Palaeont. afr.,* 13, 47-55.

ROY CHOWDHURY, T., 1970. Two new dicynodonts from the Triassic Yerrapalli Formation of Central India. *Palaeontology,* 13, 132-144.

LIST OF ABBREVIATIONS

A.	Angular
ART	Articular
BO	Basioccipital
bo.t	basioccipital tubera
car.f.	carotid foramen
D	Dentary
ECT	Ectopterygoid
EO	Exoccipital
F	Frontal
f.m.	foramen magnum
f.o.	foramen ovalis
IP	Interparietal
i.pt.v	interpterygoid vacuity
J	Jugal
j.f.	jugular foramen
L	Lacrimal
l.cond.	lateral condyle
l.d.	lacrimal duct
l.f.	labial fossa
m.cond.	median condyle
M.f.	Meckel's fossa
MX	Maxilla
N	Nasal
OP	Opisthotic
P	Parietal
PAL	Palatine
p.b.	pineal boss
p.f.	pineal foramen
pit.f.	pituitary foramen
PMX	Premaxilla
PO	Postorbital
PP	Preparietal
PR.ART	Prearticular
PRF	Prefrontal
PRO	Paraoccipital process of the opisthotic
PSP	Parasphenoid-bassisphenoid complex
PT	Pterygoid
p.te.f.	posterior temporal fenestra
QJ	Quadratojugal
q.f.	quadrate foramen
q.r.pt.	quadrate ramus of pterygoid
SA	Surangular
SO	Supraoccipital
SPL	Splenial
SQ	Squamosal
ST	Stapes
u.c.	Upper canine
V	Vomer
Dots	Matrix
Cross-hatching	Broken bone

ALL SCALES IN CENTIMETRES.

Legends to Text Figures.

Fig. 1. Dorsal view of specimen 3638 as preserved.
Fig. 2. Palatal view of specimen 3638 as preserved.
Fig. 3. Side view of specimen 3638 as preserved.
Fig. 4. Occipital view of specimen 3638 as preserved.
Fig. 5. Left lateral view of lower jaw of specimen 3638 as preserved.
Fig. 6. Dorsal view of specimen 3636 as preserved.
Fig. 7. Palatal view of specimen 3636 as preserved.
Fig. 8. Side view of specimen 3636 as preserved.
Fig. 9. Occipital view of specimen 3636 as preserved.
Fig. 10. Dorsal view of lower jaw, specimen 3636 as preserved.
Fig. 11. Side view of lower jaw, specimen 3636 as preserved.
Figs. 1-5 *Rechnisaurus cristarhynchus* Roy Chowdhury.
Figs. 6-11 *Kannemeyeria latirostris* sp.nov.

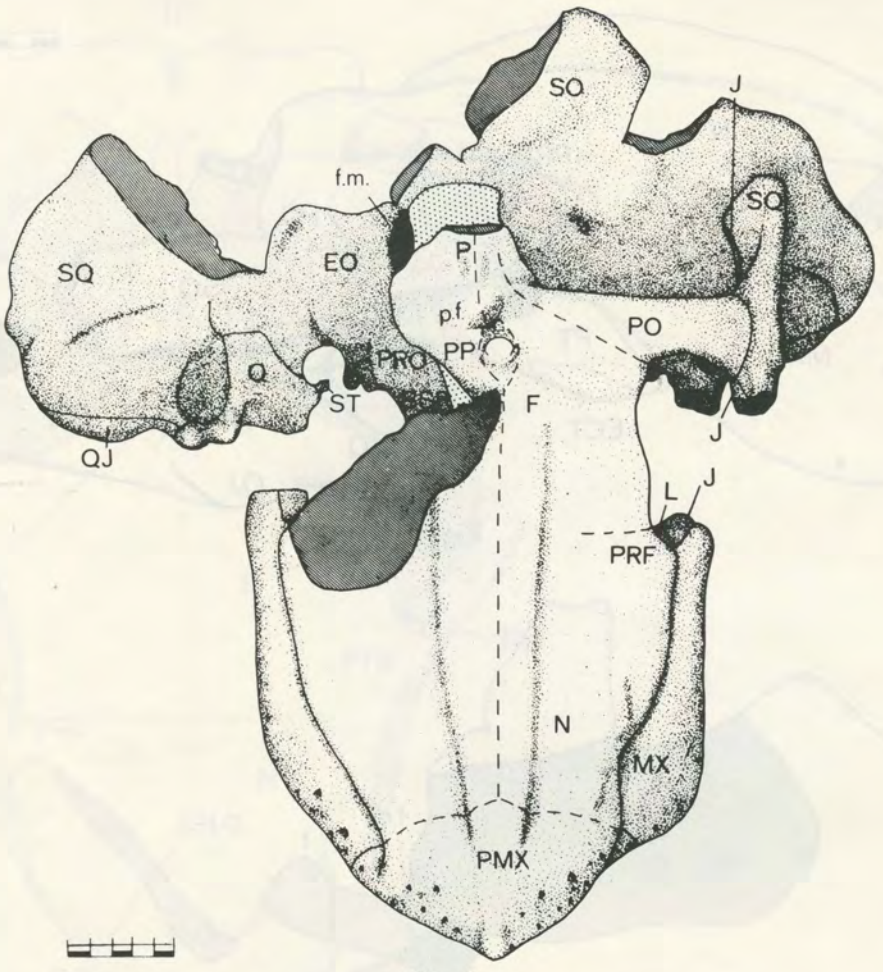
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Fig. 1

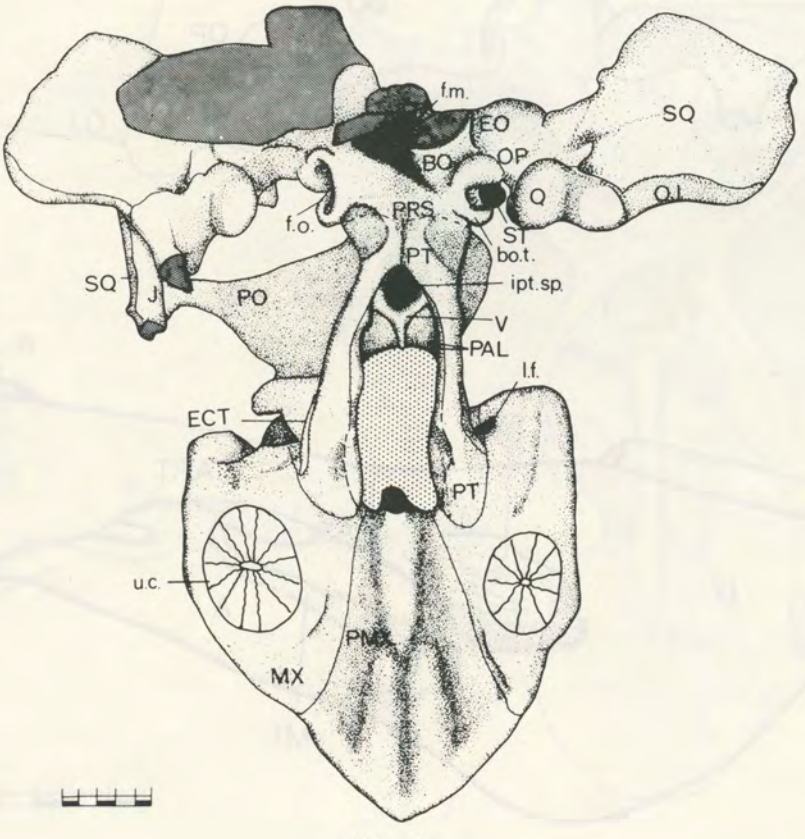
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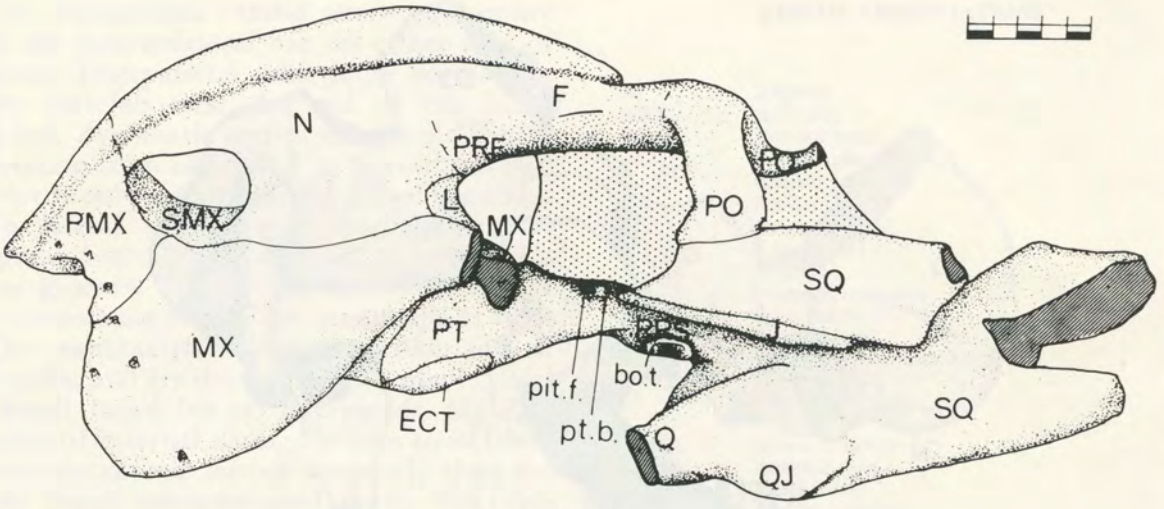
Fig. 2



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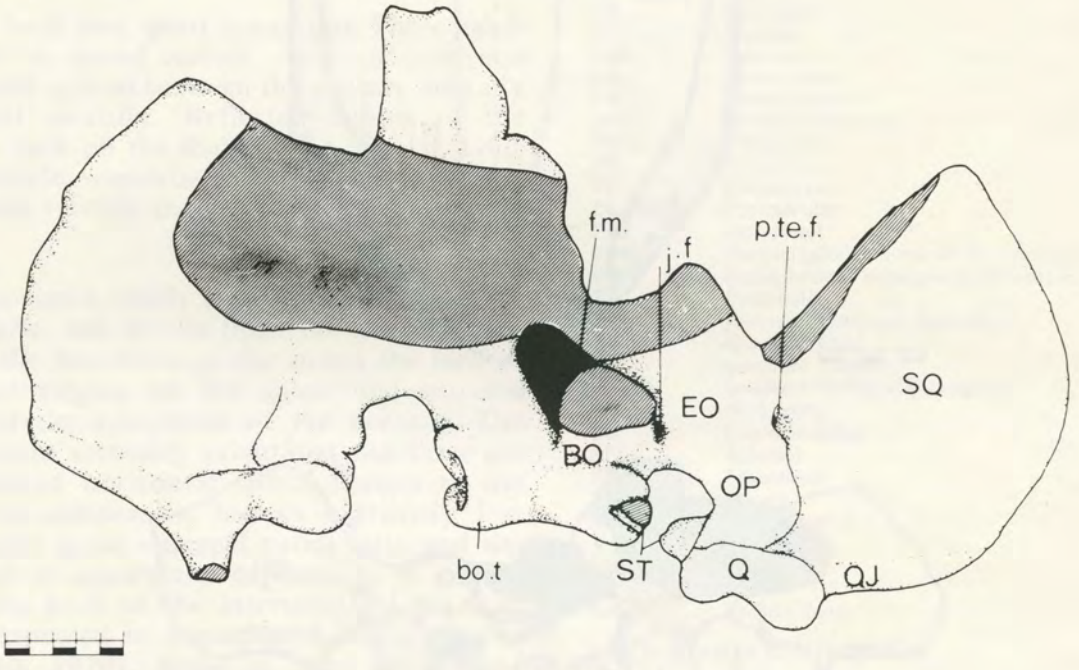

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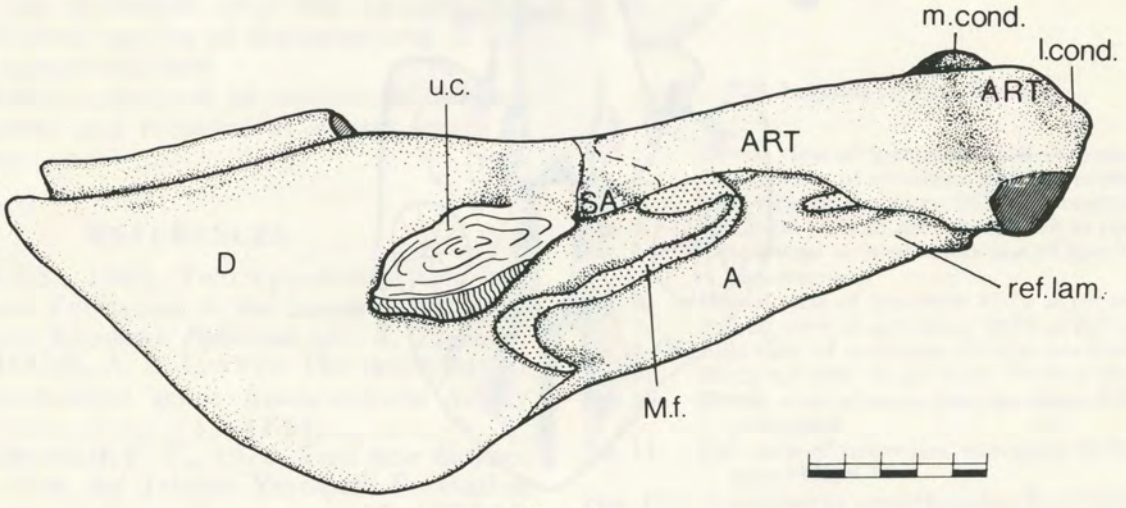

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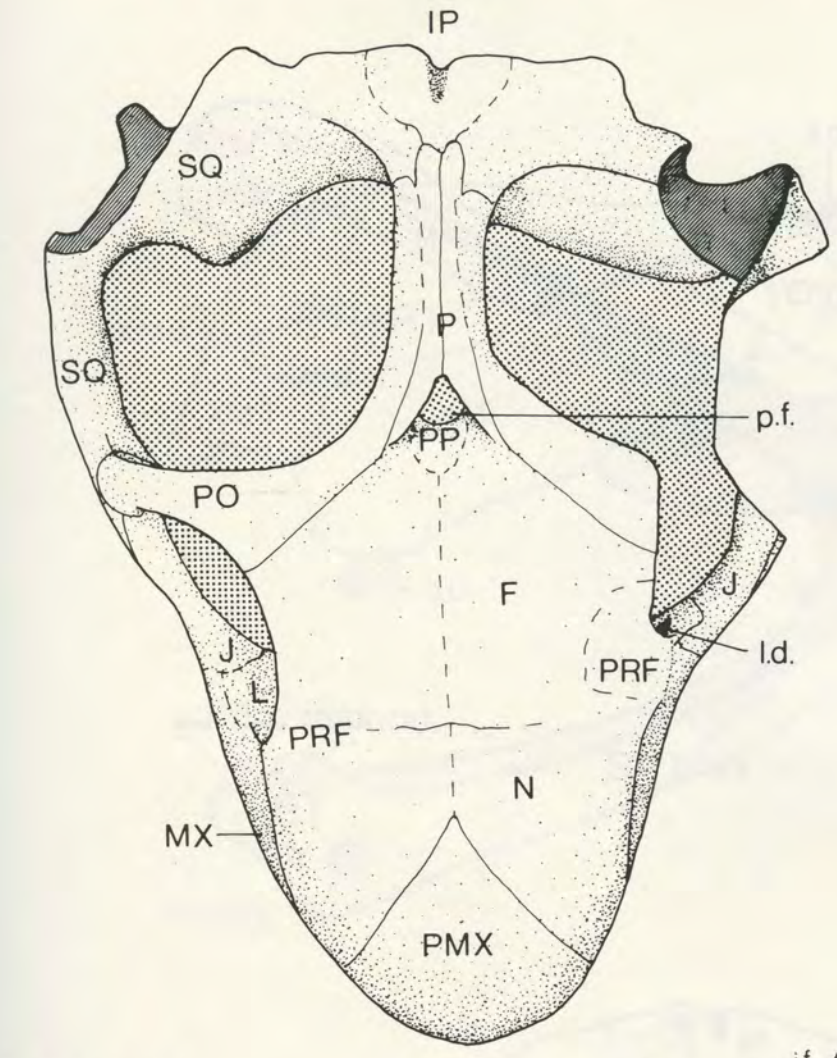
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Fig. 6

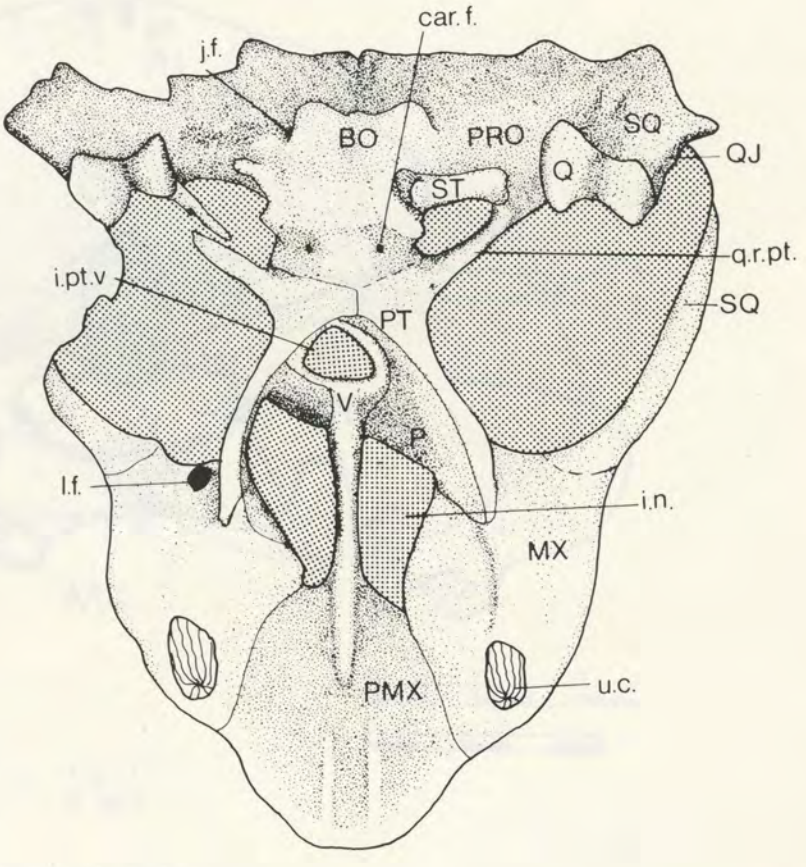
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Fig. 7

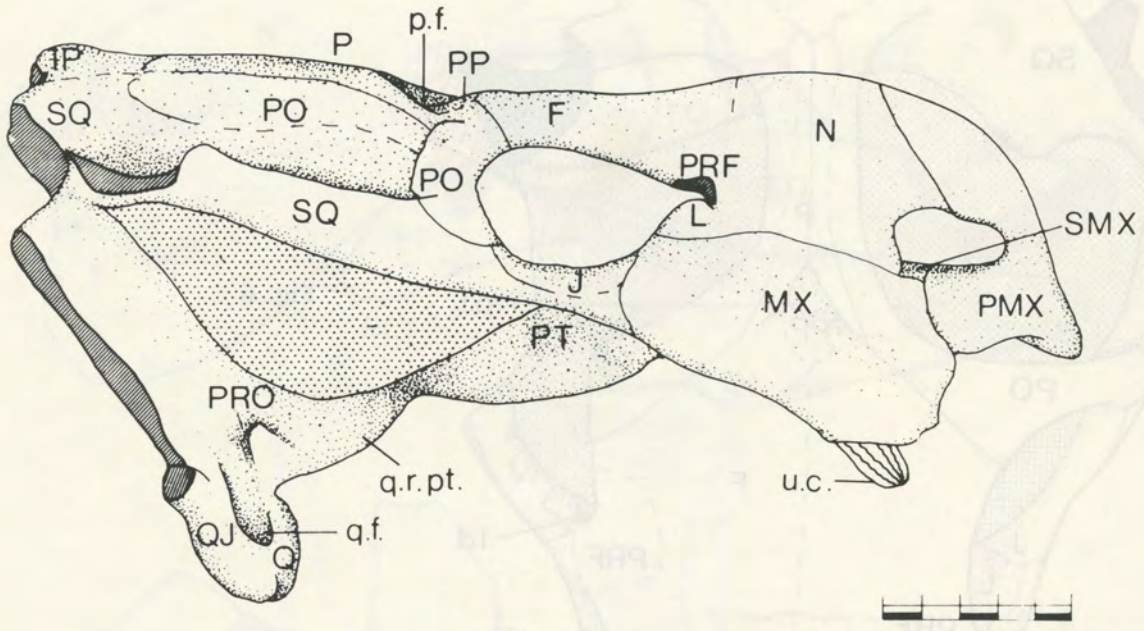
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Fig. 8

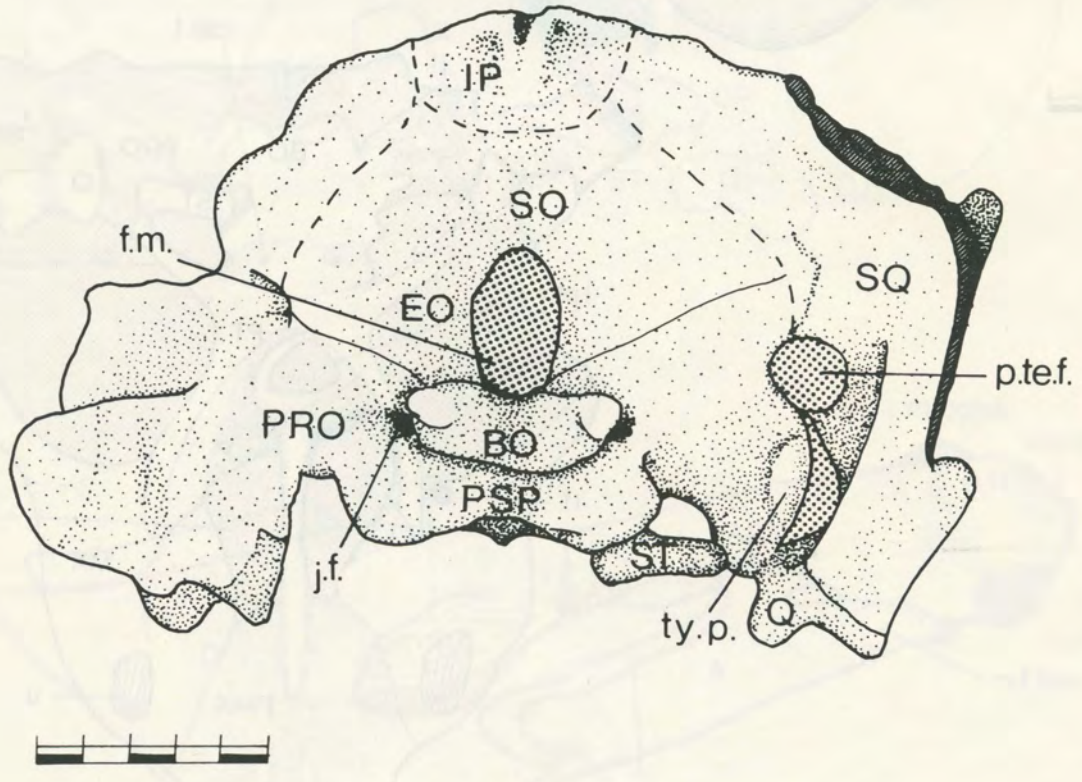
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Fig. 9

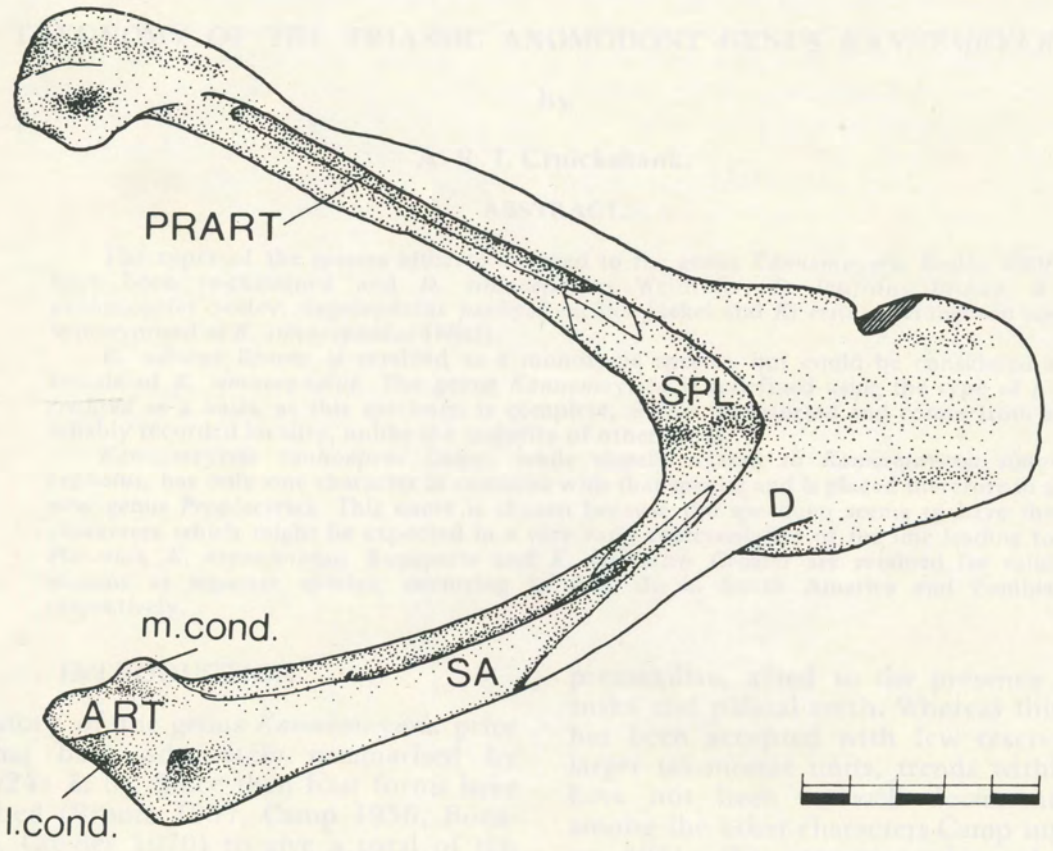
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Fig. 10

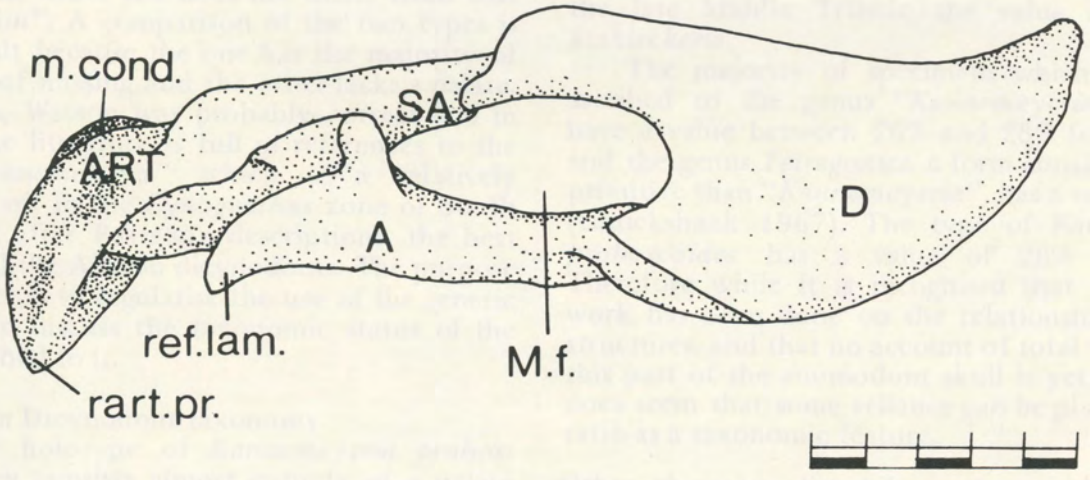
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Fig. 11