

On a new reptile from Welte Vreden (Beaufort West), Eunotosaurus Africanus (Seeley) / by H.G. Seeley.

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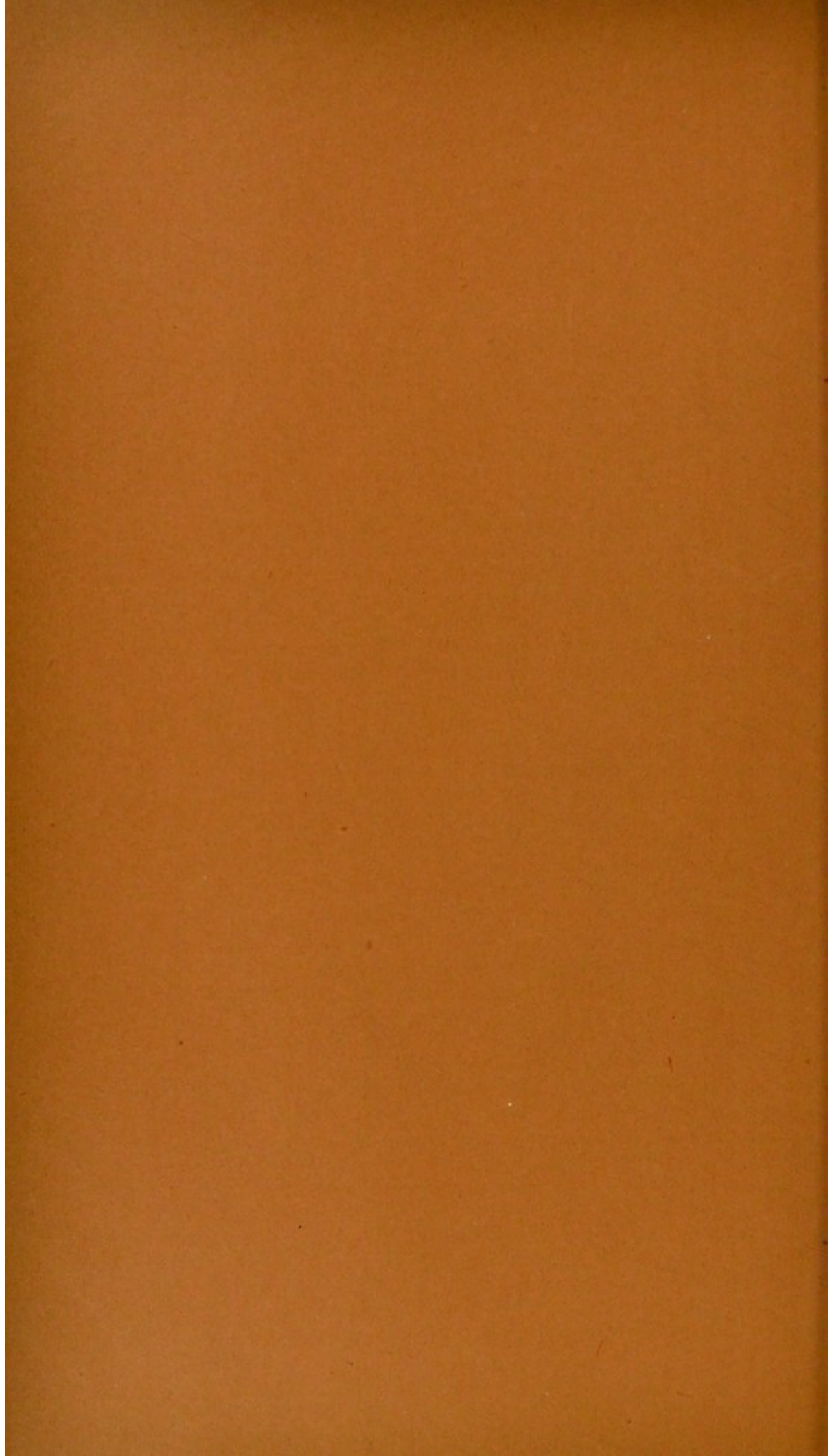
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On a NEW REPTILE from WELTE VREDEN (BEAUFORT WEST),
EUNOTOSAURUS AFRICANUS (SEELEY). By H. G. SEELEY, Esq.,
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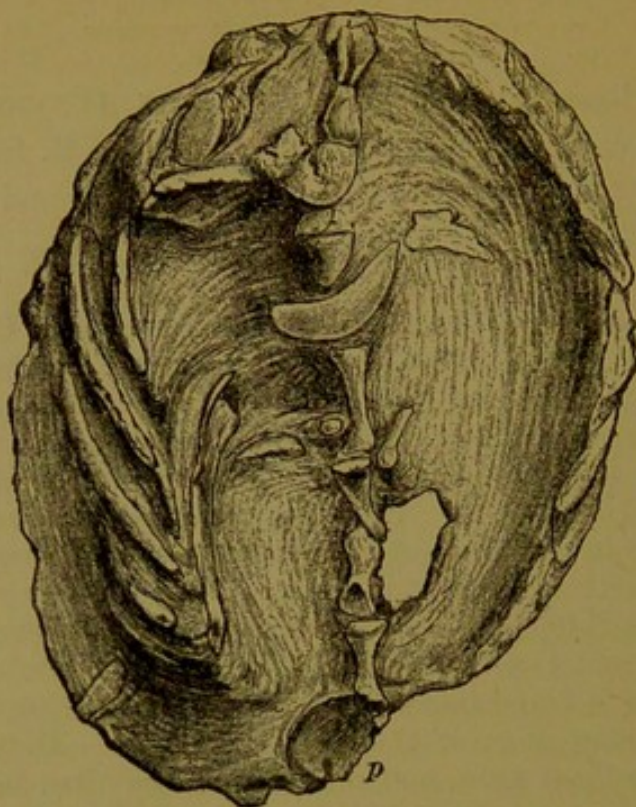
WHEN I visited Welte Vreden, near Beaufort West, Cape Colony, in August 1889, Mr. L. Pienaar gave me a small ovate concretion which contained the dorsal region of a new reptile. As preserved it is 7.5 centimetres long and 5.75 centimetres wide.

It shows on the ventral aspect the under surfaces of seven consecutive dorsal vertebræ. These centrams are more slender and elongated than in any South African fossil previously known. They decrease in length from front to back. The first (which may be the first dorsal) is fully 1.25 centim. long, while the seventh is 0.75 centim. long, and is probably the last dorsal or lumbar vertebra, since the pubis is found immediately behind it. These vertebræ in form and number suggest the Chelonian type. They are of an elongated hour-glass form, and relatively longer than in Teleosaurs. The centrum appears to be hollow, but this condition is probably the effect of deep penetration of the conical notochordal substance, as in *Mesosaurus*, and the vertebræ referred by Sir R. Owen to *Tapinocephalus*. A conical cavity penetrates the posterior end of the sixth centrum, and apparently the anterior end of the first, so that the constriction in the middle length of the centrum is due to the tapering away of these conical cups. The articular faces are not exposed, but are inferred to be approximately circular, and the under surface of the centrum is rounded from side to side. In the seventh vertebra a slight lateral widening is seen in front, towards the neural arch. (See fig. 1, p. 584.)

The neural canal is fairly large and rather wider than high, but is only exposed by fracture of the neural arch on the dorsal surface. There is no indication of such transverse expansion of the neural arch as is seen in the Pareiasauria and Mesosauria, so far as can be judged from the bony tissue preserved. The neural spine is compressed as shown in the first vertebra, but there is no evidence of its length. There is no satisfactory evidence that transverse processes were developed: and the ribs were certainly attached closely to the sides of the neural arches, much as in Chelonians, but apparently more widely along the side of the arch.

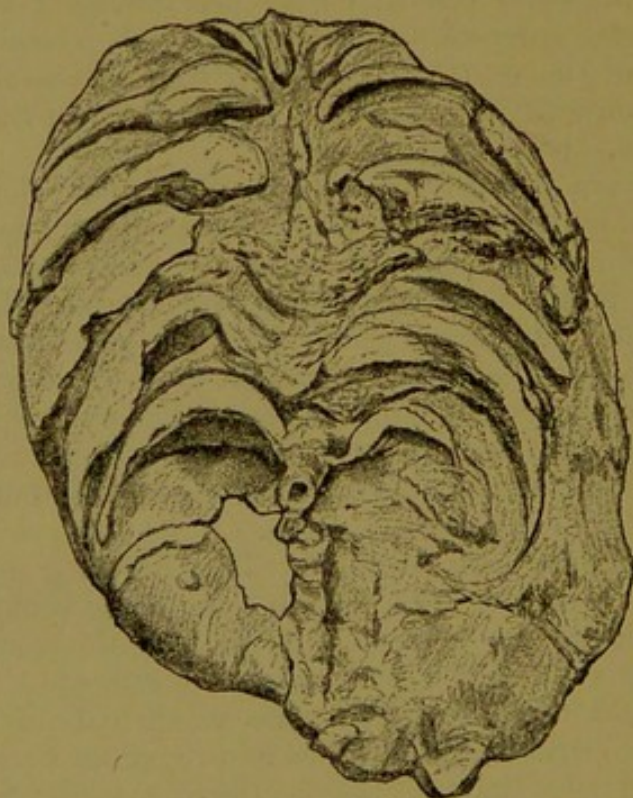
The ribs are remarkably massive. They are long and convexly curved, deep and convex from side to side in the proximal ventral portions, which are only exposed obliquely on the posterior aspect where the ribs are crushed downward and forward. Above this powerful support there is a thin plate which extends beyond the inflated inferior portion of the rib, so as to give an antero-posterior extent of about 1 centimetre. Hence the ribs appear to be as wide as the vertebræ are long. This expanded superior layer is broken

Fig. 1.—*Ventral aspect of Eunotosaurus.*



Natural size. *p*, os pubis; and vertebræ.

Fig. 2.—*Dorsal aspect of Eunotosaurus.*



Natural size. Vertebræ and ribs.

away from the bone beneath in places, but there is no proof that it is a separate ossification. Some approach to this type of rib is seen in *Crataeomus* from the Gosau Beds.¹ Still, as the centrums have a Chelonian aspect, it is interesting that the ribs should also simulate the ribs and costal plates of Chelonians. But they were clearly free at their margins, and rather resembled the ribs of certain Edentata, like *Cyclothurus*, in their superior aspect. The ribs are about 5 centimetres long. There are one or two wide thin bones in the ventral cavity which have the aspect of being sternal ribs, or their representatives. And although there is no proof that they are correctly identified, the possibility of such ossifications being present is worth recording, as it might be a further approximation towards the Chelonian type. Nevertheless, too much importance may be attributed to such characters, unless it is remembered that the specimen affords no proof that the whole of the dorsal vertebræ are preserved.

At the posterior ventral extremity is the left os pubis (see fig. 1), a flattened bone of moderate size, thin, rather longer than wide, with a notch at the external posterior border, which recalls the condition of the bone in various Mesosauria. At the right hinder corner of the specimen are fragments of two parallel slender cylindroid bones which may be parts of the tibia and fibula.

From the fragmentary condition of the remains, it seems to me inexpedient to determine absolutely the systematic position of the genus. Every character preserved differs from those of South African fossils hitherto known, with the exception of the imperfect pubis. This bone strongly suggests that the specimen is referable to the Mesosauria, in which it is likely to be placed, in a division distinct from the Proganosauria.

In conclusion I would express my thanks to the Committee of the Government Grant Fund of the Royal Society, for assistance in making this investigation.

¹ Quart Journ. Geol. Soc. vol. xxxvii. (1881) pl. xxvii. fig. 18.

