

cern the beauty that lurks in a vast number of the songs of the American Indian.

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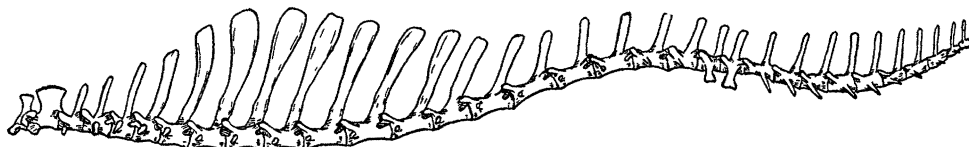
SPECIAL ARTICLES

THE DORSAL SPINES OF CHAMELEO CRISTATUS, STUCH

SINCE the discovery of the long-spined Pelycosauria, in Texas, no similar condition has been reported in any living form. Cope referred to the dermal spines of *Iguana* and *Basiliscus* as the nearest condition to that of the fossil forms. Baur noted one or two lizards in which one or two spines were a little

been figured and have never been referred to in explanation of the Permian forms.

Unfortunately this gives us no hint of the use of the elongated spines in the ancient forms. Only two species of the genus, *cristatus* and *montium*, have the elevated spines; the others have a crest supported by dermal rods. The habits of the forms are not sufficiently well known to make any suggestion as to the use of the crest or spines. It is perhaps significant that the chameleons are a highly specialized and decadent group just as the Pelycosauria were and that there is a decided tendency to develop seemingly



Vertebral column of *Chameleo cristatus* Stuch, from Efulen Kribi, Cameroon, showing elevated neural spines.

longer than the others. Through the kindness of Dr. A. G. Ruthven, curator of the Museum in the University of Michigan, I have been enabled to examine a specimen of *Chameleo cristatus* from Efulen Kribi in the Cameroon district, sent to the museum of the university by the Rev. Geo. Schwab, a missionary. The accompanying figure shows the condition of the spines of the vertebræ. The elevated neural spines beginning with the axis extended to the tenth caudal and then rapidly diminish in size on the long and slender tail. At the base of the larger spines there is a very slight enlargement indicating the attachment of the dorsal muscles which reached to that point. The upper ends of the spines were attached by a strong thread of connective tissue and the interspaces between the spines were filled by a very thin membrane of the same tissue. A few scattering threads of muscle were dispersed over the membrane. The condition of this specimen is of great interest as it shows almost exactly the conditions which have been imagined to exist in the Pelycosauria. In the literature of this group I find the presence of the elevated neural spines mentioned but they have not

useless horns and spines in other parts of the body just as there was in the Pelycosauria. It leaves one with the same impression of some sort of physiological excess of growth.

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ON THE CHEMISTRY AND DEVELOPMENT OF THE YOLK PLATELETS IN THE EGG OF THE FROG (*RANA PIPIENS*)

THE yolk platelets in the frog's egg contain 6 per cent. of lecithin and 94 per cent. of a proteid having the following composition: 1.21 per cent. of phosphorus, 1.32 per cent. of sulphur and 15.14 per cent. of nitrogen. I used gravimetric methods in determining phosphorus and sulphur and the Kjeldahl method in determining nitrogen. This composition and the precipitation reactions of the proteid indicate it to be a nucleoalbumin related to the vitellins and ichthulins of the yolk of the eggs of birds and fish, hence I will call it batrachiolin.

In the germinal vesicles of the ovarian eggs nucleoli arise from the chromatin. These nucleoli grow and multiply by fission and budding, and during the fall of the year migrate