Seri : avát, âv't—blood ; hwàt in Yavapai.
hámt, amt, ampte—earth, soil ; amát in Cuchan.
ehe—tree, bush ; e—i in Cuchan.
apis—tobacco ; ópi in Cocopa.
kakólx—large ; kaokó—o in Cochimi.
ax, ache, ahj—water ; aha in Yavapai, and frequent in North American languages as ax, áha, etc.

A few more correspondences of this sort, especially expressing parts of the human and animal bodies, are found, but they are too weak in numbers and quality to prove anything against the overwhelming number of terms that show absolute disparity in Yuman dialects compared with Seri. The terminals of Yuma are more typically vocalic than those of Seri.

The possibility of Seri being of the same kin as the Nahuatl dialects spoken around it in the State of Sonora, viz, the Pima, Pápago, and Ópata, has been carefully considered by the noted Americanist, Professor J. E. Buschmann, member Royal Prussian Academy of Sciences (1854). The result was that no radical affinity existed between the two groups.

At present the chances stand entirely against genealogical affinity of Seri with Yuma ; but a final verdict can be rendered only after expert linguists have examined that language on the spot and obtained a lexicon and ethnographic texts in a way that will prove absolutely correct in their phonetics.

A. S. Gatschet.

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*ON THE INFLECTION OF THE ANGLE OF THE JAW IN THE MARSUPIALIA.**

The posterior part of the jaw in the Marsupialia has been long recognized as peculiar in that the angle, instead of projecting vertically downwards, as is usually the case in the Mammalia, is bent abruptly inwards so as to produce a horizontal shelf, thus giving the jaw, when viewed from the outside, the appearance of lacking an angle entirely, its arcuate lower border passing directly into the articular condyle.

With the object of ascertaining the cause of this condition, the writer has examined various mammalian jaws and also dissections and serial sections through the heads of the common opossum (*Didelphys marsupialis*) and the pouch young of the wallaby (*Macropus* sp.).

The opossum shows the following anatomical relations. The whole outer surface of the inflected angle is occupied by the outer fasciculus of the masseteric muscle, the entire inner surface by the pterygoideus internus. Both of these muscles are powerfully developed, while the pterygoideus externus is much reduced. The latter muscle is attached above the inflected angle. The inflection introduces three peculiar features: It increases abundantly the insertion area of the masseter and pterygoideus internus ; It places the latter muscle in opposition to the lateral traction of the masseter on a weak symphysis ; it renders the line of traction of the pterygoideus internus vertical, so that with a reduction of the pterygoideus externus there is scarcely any provision for transverse muscular motion and so for a sectorial or a grinding action of the teeth. Of these peculiarities the last is probably the only one of primary significance. It contrasts strongly with the usual condition in placental types.

Sections through the head of the developing wallaby show the cavity of inflection to be occupied by Meckel's cartilage. This seems to indicate that the inflection has originated by the disappearance of bony elements on the inside of the jaw and by the reduction of Meckel's cartilage. *The inflected portion represents primarily not an angle, but a part of the lower border of the jaw.*

* Preliminary paper read before the American Association for the Advancement of Science, New York, June, 1900.

The inflection very early became fixed in the Marsupialia, as shown by the Jurassic forms *Spalacotherium*, *Phascolotherium*, and *Triconodon*. In the opossums (Didelphyidæ), which (excepting *Myrmecobius*) are the most primitive forms of to-day, the inflection exhibits a primary relation to the vertically acting non-sectorial teeth. The same may be said of the Dasyuridæ judging from *Dasyurus*. The thylacine, representing a predaceous carnivorous type, has not been available for examination. The kangaroos (Macropodidæ), which resemble the placental Ungulata, to a great extent, in tooth action and jaw structure, show no downward prolongation of the angle for the increase of the pterygoid insertion area such as is characteristic of the latter. The presence of the inflection makes it necessary to get the required increase in another way, and in such a manner as to substitute a transverse action of the muscle for a primitively vertical one. It is accomplished by a great excavation of the internal surface of the base of the inflected angle. In its interference with the downward prolongation of the angle, the inflection is detrimental; in other respects it is functional, since that part of the pterygoideus internus which is attached to its tip still acts vertically and also opposes the traction of the masseter on a weak symphysis. The phalangers (Phalangeridæ) take an intermediate position between the Didelphyidæ and the Macropodidæ. *Tarsipes*, which is unique in lacking the inflection, is degenerate in this respect, since it also lacks the coronoid process and has reduced teeth. The koala (*Phascolarctus*) shows a secondary straightening out of the angle associated with a deep auditory bulla. The wombats (Phascolomyidæ), and the bandicoots (Peramelidæ) show no points of special interest.

An examination of the available evidence leads to the following conclusions:

(1) The inflection of the angle is primarily associated with an exclusively vertical action of the teeth.

(2) It probably originated by a reduction of bony elements and of Meckel's cartilage on the inside of the jaw.

(3) The inflection became fixed in the Marsupialia, and is to be regarded throughout the existing series as a persistent primitive character.

(4) In primitive Marsupials, such as the Didelphyidæ, the inflection retains its original character, while in specialized types, such as the Macropodidæ, it becomes modified in an attempt to substitute a partly transverse muscular action for an exclusively vertical one.

(5) The inflection may be secondarily functional in many cases in opposing the traction of the pterygoideus internus to the lateral traction of the masseter on a weak symphysis.

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OKLAHOMA GEOLOGICAL SURVEY.

THE necessity for geological work in Oklahoma is the more obvious in view of the fact that the surveys of adjoining States have been in progress for a number of years. Kansas, Missouri, Arkansas and Texas have already published largely on this subject, while in Oklahoma nothing has been written except a few scattered articles.

During the past summer the initial work of the Survey has been accomplished. A sum sufficient to begin the work was appropriated by the last Legislature. Dr. A. H. Van Vleet, of the University of Oklahoma, had charge of the work and acted as zoologist for the Survey. Other members were C. N. Gould, geologist, Paul J. White, botanist, and Roy Hadsell, general assistant. The party traveled by wagon, being provided with tents and other necessary camping facilities.

It had been planned to spend part of the