*ON THE PENIAL STRUCTURES OF THE SAURIA.**

IN the course of preparation of a work on the scaled reptiles of North America for the Smithsonian Institution it has become necessary to examine some neglected parts of the anatomy. In the present paper I give the results of an investigation into the structure of the hemipenis of the lizards. Very little attention has been given to the subject hitherto, and our knowledge up to 1856† is thus summarized by Stannius: A duplication or bifurcation of each organ is present in *Lacerta* and in *Platydactylus guttatus*. The copulatory organs of the Chamæleonidæ are distinguished by their shortness. In various Varanidæ which have been investigated, the internal cavity (external when protruded) has transverse concentric folds. A fissure interrupts these folds, so that they are not complete annuli. The extremity is acuminate and expands at the base, forming a kind of glans.

In 1870‡ J. E. Gray describes and figures this organ of *Varanus heraldicus*, giving the best illustration that I know of. In 1886 Wiedersheim§ describes and figures this organ in Lacerta. Besides these references I know of nothing later.

As was to have been anticipated, I have found these organs to correspond with the rest of the structure, and to furnish invaluable aids to the determination of affinities among the Sauria. Reference to them cannot be omitted henceforth in cases where the other characters render the question of affinity uncertain.

In the Sauria the male intromittent organ or hemipenis presents much variety of structure, showing some parallels to the corresponding part in the snakes. It is, however, rarely spinous, as is so generally the case in the Ophidia, the only spinous forms being, so far as I have examined, the American Diploglossinæ and genera allied to *Cophidas*.

The higher Sauria have the apical parts modified, as in the Ophidia, by the presence of calyculi. Such are characteristic of the Rhiptoglossa and Pachyglossa. The Nyctisaura possesses the same feature. The Diploglossa, Helodermatoidea and Thecaglossa have the organ flounced, the flounces often pocketed or repand on the margin. In the Leptoglossa we have laminæ only; in the Tiidæ mostly transverse, and in the Scincidæ mostly longtitudinal. In various genera terminal papillæ are present. The organ may be simple, or bifurcate, or merely bilobate. I have not met with the case so common in Ophidia, where the sulcus spermaticus is bifurcate and the organ undivided.

The structures of the hemipenis have a constant systematic value. As in the Ophidia, the value differs with the character, but it varies from generic to superfamily in rank.

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* Abstract of a paper read before Sect. F of the Amer. Ass. Adv. Sci., Buffalo, August, 1896.

† Zootomie der Amphibien, p. 266.

‡ Annals Magaz. Nat. Hist., 1870, VII., p. 283.

§ Lehrbuch der Vergl. Anat. Wirbelth.

CURRENT NOTES ON ANTHROPOLOGY.

THE ARCHÆOLOGY OF SWITZERLAND.

A BRIEF and excellent conspectus of the archæology of Switzerland is presented in a recently published lecture by Dr. J. Heierli, of the University of Zurich. A number of important 'stations' are named and described in the appendix.

That the upper valley of the Rhine was peopled in palæolithic and immediately post-glacial times is proved by the extraordinary discoveries in the Kessler-loch, near Thaingen. They include bones of extinct animals, weapons and ornaments, and drawings of unquestionable antiquity. The lake dwellings contribute a rich harvest for the following period, the neolithic; while the bronze and later epochs have numerous