

## DISCUSSION AND CORRESPONDENCE

## THE PELYCOSAURIAN MANDIBLE

TEN years ago I figured and described a peculiar bone in the plesiosaurian mandible, lying along the teeth on the inner side and meeting its mate in the symphysis. It was in form and position so totally unlike the coronoid bone of other reptiles that I hesitated long before calling it that. Within the past few years, however, Dr. Andrews has recognized the same bone in certain European plesiosaurs, and its identity seems assured.

Some time ago I made out with considerable confidence a similar structure in the mandible of *Dimetrodon*, from the Permian of Texas, but, in the absence of corroborative proof, I have waited till an abundance of material has confirmed beyond dispute the presence of a bone in the mandible lying along the teeth and reaching nearly to the symphysis. It is narrow and rather loosely attached to the dentary, so much so that it is usually macerated away and lost. It lies along the alveolar border, beginning in an acute point opposite the middle of the third tooth, and extends apparently quite to the end of the tooth series. For most of its extent it is bordered below by the splenial, which diverges from it in front opposite the posterior end of the symphysis to enclose a V-shaped tongue of the dentary. It lies closely applied to the bases of the teeth, covering over the alveolar pits for the growth of new teeth. It apparently ends below the last tooth by a narrow end, but it is not improbable that it is very narrowly continuous with the true coronoid, and if so is quite identical with the structure in the plesiosaurs. The true coronoid lies at the summit of the coronoid eminence, extending about two inches back of the teeth. It is covered on the outer side by the dentary, and is inserted in a pit in the surangular; it is usually lost in specimens of *Dimetrodon*. If it is continuous with the alveolar bone, as it seems to be, the connection must be very narrow. I doubt not that it is homologous with the bone called epicoronoid by Watson in the *Stegocephalia*, even as the

alveolar bone is homologous with his so-called coronoid.

The splenial, hitherto undescribed in the Pelycosauria, is a large element lying along the lower side of the mandible, visible from the outer side and entering extensively into the symphysis. As I have previously stated, and as reaffirmed by Watson, this symphyseal union of the splenial is characteristic of all primitive reptiles, and evidently also, of all primitive amphibians. To nearly as far as its middle the splenial is bordered above on the inner side by the alveolar bone already described. Back of its middle it is separated from that bone by the slender prolongation of the prearticular, precisely as in the plesiosaurs.

This resemblance of the structure of the mandible in the pelycosaurs with that of the plesiosaurs has an important bearing on any theory of the phylogeny of the latter group. They could not have originated from any forms in which the coronoid had been reduced to the condition in all modern reptiles.

Full descriptions and figures of the mandible, not only of *Dimetrodon*, but also of various other Permian reptiles and amphibians will be published within a year.

S. W. WILLISTON

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## THE DISTANCE HOUSE FLIES, BLUE BOTTLES AND STABLE FLIES MAY TRAVEL OVER WATER

LITTLE evidence exists as to how far stable and blue bottle flies ordinarily travel to or from their feeding and breeding places. House flies, it is claimed, seldom stray over 500 yards from their breeding places; but some English observations prove that they may go over a mile from an infested dump to the nearest village.

In connection with the Cleveland Anti Fly Campaign, urgent requests were sent in to Dr. Jean Dawson for some means of relief from the plague of flies on the cribs of the water works, situated a mile and a quarter, five miles and six miles out in Lake Erie north of the city. Being in Cleveland for a