

caudal inclusive, beyond which some displaced caudals belonging to the type specimen were recovered. Two cervico-dorsals may have been present.

Cervical Vertebrae. The neck vertebrae of the type had suffered from surface exposure at the time the skeleton was discovered. They lay with the right side downward, and the centra and the majority of the left zygapophyses had disappeared through weathering. What remained intact beneath the surface of a short rock slope consisted mainly of neural spines, and right zygapophyses in proper relative position to each other. Eight vertebrae are represented in the series (Figure 14A) of which part of the right postzygapophysis is all that remains of the anterior one. Comparison with the cervical series of *Tyrannosaurus* as described by Osborn (1906),¹ reliance being placed principally on the shape, length, and direction of the neural spines, and the form of the zygapophyses, has suggested the propriety of considering the series as inclusive of the third to the ninth cervical with the posterior one a cervico-dorsal. If the right postzygapophysial fragment in reality belongs to the axis instead of to the third cervical then the succeeding vertebrae would be numbered accordingly and the last of the series of eight would become the ninth and last cervical.

Presumably then seven cervical vertebrae represented in the specimen out of a total of nine, the parts preserved being principally zygapophyses with their processes and neural spine. If, it is thought, the third to the ninth vertebra both included, Figure 14A. With these, forming the posterior end of the series, are parts of what is considered to have been the anterior one of two cervico-lateral vertebrae.

The cervical vertebrae, as determined, are represented by the following parts:

Third cervical;—fragment of the right postzygapophysis only.

Fourth, fifth, sixth, and seventh cervicals;—the right pre- and postzygapophyses, the neural spine, and the base of the right transverse process.

Eighth cervical;—the right prezygapophysis, the right and left postzygapophyses, and the right transverse process (with cervical rib, Figure 21B). Neural spine not preserved.

Ninth cervical;—the right and left prezygapophyses, the right and left postzygapophyses, the lower portion of the neural spine, and the right transverse process.

First cervico-dorsal;—the right prezygapophysis and the base of the right transverse process. No neural spine preserved.

The above give a combined length of about 648 mm. (25½ inches) for the seven cervical vertebrae represented.

In these vertebrae the neural spines are short, rather irregular in lateral outline above, laterally compressed, excavated below on their narrow front and back faces, and placed rather far back over the posterior

¹ *Tyrannosaurus*, Upper Cretaceous carnivorous dinosaur (second communication); Bull. Am. Mus. Nat. Hist., vol. XXII, art. XVI, p. 287, fig. 3.