

BULBOUS CRANIUM IN A DWARF HORSE SKULL

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The skull of a dwarf horse, deposited in the collection of recent mammals of the Stovall Museum of Science and History at the University of Oklahoma, is striking in its development of an enlarged, bulbous cranium (Fig. 1). The specimen, OU 3818, is that of a female horse collected in Peru and donated to the museum by the Oklahoma City Zoo. Although it would be conjectural to comment upon the cause of dwarfism and its relationship to this cranial development, the bulbous formation and the placement of the parietal crests is noteworthy.

Although all cranial sutures are well-fused and difficult to trace, the region of the parietal bones is clearly the area of greatest expansion, accompanied by an enlargement of the interparietal. To compensate for the parietal expansion, the temporals and frontals are slightly enlarged, and the nasals show a marked concavity. The interparietal is expanded, being situated between the widely separated external

parietal crests, which are approximately 2.5 cm apart in this region. The basioccipital, foramen magnum, occipital condyles, and the auditory region appear to be in normal proportion. Lacrimal tubercles are present, and the dentition is normal with the exception of the upper right canine, which is not erupted.

Sisson and Grossman (1) state that in the skull of the normal horse, the external parietal crest is placed medially in the parietal region, but bifurcates in front, forming branches which become continuous with the frontal crests. The frontal crests continue to curve outward on each side to the root of the supraorbital process. The dwarf skull, however, has two parietal crests that extend from the occipital crest, pass on either side of the enlarged interparietal bone, and terminate at the anterior dorsal surface of the temporal fossa. Each crest passes through the central part of its respective, enlarged parietal bone (Fig. 2).

It is probable that the bulbous cranium in the specimen is the result of some form of genetic dwarfism, rather than a simple

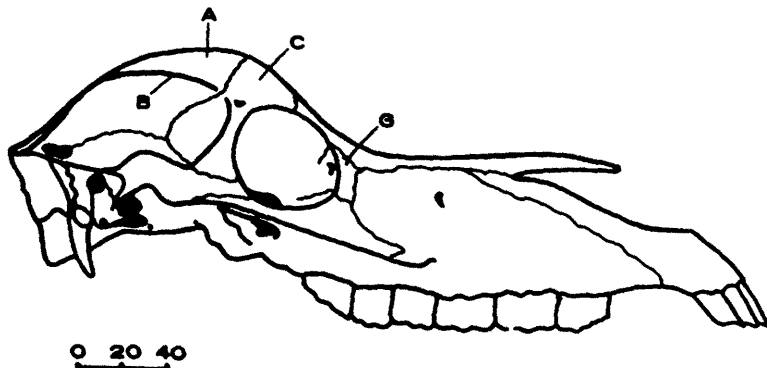


FIGURE 1. Lateral surface of dwarf horse skull. All sutures are well-fused and traced only approximately (wavy lines). No sutures are traced within the orbit. Scale is graduated in mm. A, parietal; B, parietal crest; C, frontal; G, lacrimal tubercle.

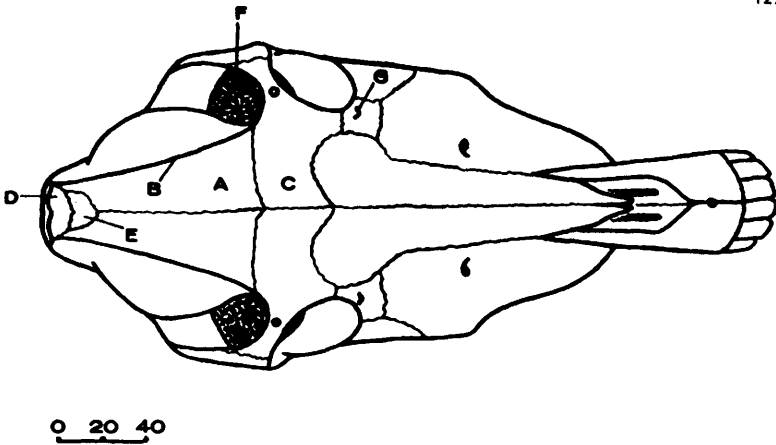


FIGURE 2. Dorsal surface of the dwarf horse skull. All sutures are well-fused and traced only approximately (wavy lines). Scale is graduated in mm. A, parietal; B, parietal crest; C, frontal; D, supraoccipital; E, interparietal; F, temporal fossa; G, lacrimal tubercle.

developmental anomaly. Shortly before she died, this female gave birth to a dwarf female (OU 3819) with an enlarged cranium like that of the mother. The relative growth of the parietal in these skulls appears not to have been reduced in the same proportion as the rest of the skull, thereby producing a skull characterized by an enlarged parietal and associated with expansion of the other cranial bones.

Measurements in mm (OU 3818): greatest length of skull, 345.0; zygomatic

breadth, 147.0; interorbital breadth, 85.6; mastoidal breadth, 72.6; length of nasals, 150.8; length of nasal suture, 139.5; length of diastema, 43.2; occipitonasal length, 295.0; basal length, 318.0; basilar length, 303.0; molar tooth row, 131.0; palatal length, 180.0; palatilar length, 165.0; postglenoid length, 78.0.

REFERENCE

1. S. Sisson and J. D. Grossman. *The Anatomy of the Domestic Animals*. W. D. Saunders, Philadelphia, 1940.