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ASPECTS CONCERNING THE SKULL MORPHOLOGY IN NANDU (RHEA AMERICANA)

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Summary

The study of 10 skull which proceeded from birds of different sexes and different ages, lined out the fact that this skull are likewise respect the shape with the anseriform birds skull.

Maximum width of the dorsal face is on the level of processus postorbitalis. The orbital cavities are wide and are separated by a orbital septum. In the middle part this septum is membranous. The internal nares are long. The hard palate is formed by palated processes of incisive and maxillary bones. Only the medial mandibulary processes is very developed.

The actual information about the skeletal system by Nandu is a summary, that way we realized a detailed study of it. At skull we find interesting peculiarities. In ratite this is very small relating to the body weight.

Materials and methods

The research was made on 10 birds which had different ages and sexes, from Zoo-Bucharest. The soft structures of the head have been cleaned and the skull was macerated carefully, afther this it was whitend with perhidrol 3%. We used Nomina Anatomica Avium-1993.

Results and discussions

The skull is relatively small as against the bird size, with a alongeted facial part. Incisive bone really developed. The frontal processes of incisive bones and the nasal bones mark the medial edge of nasal opening. The caudal end of nasal bones gets between the lacrimal bones and the frontal processes of intermaxilarus. The lacrimal bones have an extremely developed rostral orbital process. The frontal bone is very developed and convex in all courses. It has a small rostral part and a caudal part bigger.

The orbital cavities are large. These are separated with interorbital septum. The middle part of it is membranous. The lacrimal bones mode the rostral edge of orbit. The jugual bone is long and thin. It's joined rostrally with maxilla and caudally with quadrate bone.

The sphenoid is short. It's got a optic hole, common of both orbites. Together with occipital and parietal, form the occipito-spheno-palatine fissure.

The maxilla is shorter and together with the maxillar processes of incisive mark the lateral border of nasal hole, which is extremely large in this species.

The ventral side got a lot of spaces. Caudally the occipital bone and the sphenoid bone mark the occipito-spheno-palatine fissure. The palatine bones have a lamellar shape. The maxillar bone and the palatine process contributed to form the hard palate.

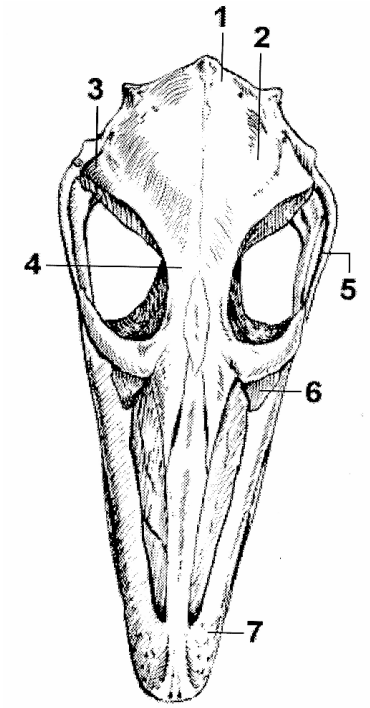

Fig. 1 Skull of Rhea americana – dorsal aspect
1 – Os occipitale; 2 –os parietale; 3 – os squamosum; 4 – os jugale (osul jugal); 6 – os maxillare; 7 – os premaxillare (intermaxilarul)

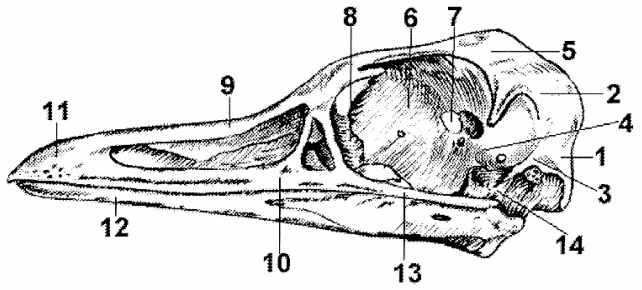

Fig. 2 Skull of Rhea americana – lateral aspect
1 – os occipitale; 2 – os parietale; 3 –os squamosum; 4 – os orbitosphenoidale; 5 – os frontale; 6 – septum interorbitale; 7 – foramen opticum; 8 – os ectethmoidale; 9 – os nasale; 10 – os maxillare; 11 - – os premaxillare (intermaxilarul); 12 –ossa mandibulae; 13 - os jugale (osul jugal); 14 – quatratum.

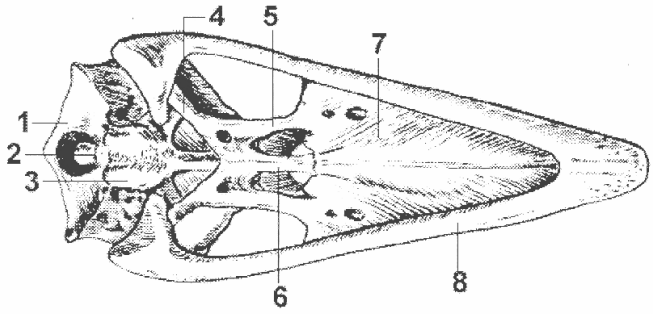

Fig. 3 Skull of Rhea americana – ventral aspect
1 – os occipitale; 2 – condylus occipitalis; 3 – os orbitosphenoidale; 4 –os pterigoydem; 5 – os palatinum; 6 – vomer; 7 – proc. palatinus maxillare; 8 – ossa mandibulae.

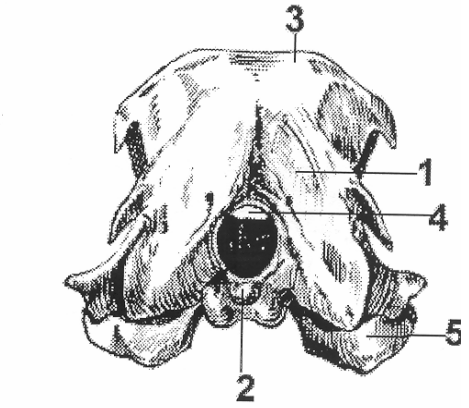

Fig. 4 Skull of Rhea americana – caudal aspect
1 – occipitalul; 2 – condilul occipitalului; 3 – frontalul; 4 – gaura occipitală mare; 5 – mandibula.

The nuchal face is represented by occipital bone in the most of it and it's formed from exoccipitale and supraoccipitale. The occipital bone has long and oval occipital hole, with the long axle orientated vertically. It has, too a single circular condil.

The horizontal branch has a great developed of processus mandibulae medialis.

Conclusions

1. Unlike the domestic fowls in nandu the participation of the bones to making the cranium even if the skull is proceeds from adult birds.

2. The orbital cavities are large in comparison with the bulk of cranian cavity.

3. The sella turcica is very deep.

4. The superior bones of the cranial wall are joined in the same manner like sheep.

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