BIOMORPHOLOGY OF HIP JOINT BONES AND MUSCLES, WHICH ACT ON IT, IN SOME SPECIES OF RALLIDAE BIRDS FAMILY – FAMILA RALLIDAE

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Biomorphological features of bones of hip joint and muscles which act on it of some species of the famila rallidae were stated on the basis of comparative anatomical analysis. It was defined that the bones which form the hip joint of the studied species of birds are differ in shape and size. Among the investigated famila rallidae, the internal structure of the proximal part of the thigh bone and the area of glenoid cavity is different, as well as location of trabecules of compact and spongy substances. The development of muscles and muscle groups that act on the hip joint depends on the load during staticolocomotion.

It is proved that the degree of development of the head of the femoral bone is caused by the direction of disposition of the femur's muscles and the strength of their tension during performing their functions; the length of the femoral neck is a sign of the maximum step length during rapid terrestrial locomotion; the areas of location of the spongy substance in the femoral bone and in the glenoid cavity of the caxal bone of birds are zones of over functional loads in comparison to the areas which are formed by the thin compact plates; the degree of differentiation of the separate muscles and muscle groups of the hip joint of birds is caused by the type of statolocomotion and peculiarities of the various kinds of manipulation movements in the gravitational field of the Earth.

Formation of the joints of vertebrates, including birds, caused by various factors such as body weight, method and speed of movement, changes of environment and way of existence. No less important in this process is the type of support and method of locomotion. Terrestrial vertebrates characterized as plantigrade, digitigrade and unguligrade types of support. Birds are only digitigrade. It was found that in addition to mentioned factors, formation of the joint surfaces is greatly influenced by the direction of muscles action. On the site of hip joint act such muscles: caudal acetabular-iliac, cranial acetabular-iliac, external acetabular-iliac, internal iliac-femoral, iliac-femoral, sciatic-femoral, obturator medial, caudal-femoral, superficial femoral-sciatic, deep sciatic-femoral, lonno-sciatic-femoral, obturator-femoral and ventral sciatic-femoral. Detected muscles, depending on their functional effect on joint are divided into flexion-efferent (caudal acetabular-iliac, cranial acetabular-iliac, external acetabular-iliac, internal iliac-femoral, iliac-femoral), extensors, or extensor-leading (obturator medial, caudal-femoral, sciatic-femoral, superficial femoral-sciatic, femoral-sciatic deep, lonno-sciatic-femoral) and lead (obturator, femoral, sciatic-femoral ventral). The degree of development of hip joint muscles relative to total body weight in the examined species of birds varying and ranges from 0.7 to 0.9%.

Birds, biomorphology, hip joint, Gallinula chloropus, Porphyrio porphyrio, Fulica atra, bones, trabecules, muscles.