

HINDLIMB MORPHOLOGY AS ONE OF KEYS IN UNDERSTANDING OF AVIAN EVOLUTION

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The rather conservative morphology of modern birds is related to their early adaptation to flight. Although hind limbs are not directly involved in flight, they nevertheless have undergone significant modifications over the course of avian evolution. Retaining general traits of bipedal limbs of ancestral archosaurs, they gradually acquired new features, related to the cranial shift of the centre of gravity and development of grasping foot. These features, generally not visible from outside, turned out to be very instructive in reconstruction of avian adaptive evolution. A group of such features, comprising the extended Garrod's muscular formula, give us a key to avian adaptive evolution at the level of families. Interrelationships between terminal tendons of long digital flexors, initially modified according to ancestral anisodactyly, are very helpful in understanding functional evolution of avian feet. They do not only indicate recent locomotor specialization, but also point out possible ancestral stages in evolution of particular taxa. As most of the key morphological features of avian hind limbs leave traces on bones, they play a significant role in revealing locomotor peculiarities of extinct birds.