

**PRELIMINARY OBSERVATIONS ON HINDLIMB MYOLOGY AND
SYNDESMOLOGY OF THE DODO (*RAPHUS CUCULLATUS*,
COLUMBIIFORMES)**

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Although many of the pigeons are arboreal birds, some of them spend most of the time on the ground. This was especially true for large ground-dwelling Dodo of Mauritius. The cursorial habit of this species must have influenced the morphology of its legs. Although a number of works had been dedicated to the peculiarities of morphology and locomotion of the extinct Mascarene bird, none of them have dealt with the reconstruction of muscular and ligament structures of its hind extremities. The only existing work in which mostly the intrinsic muscles of tarsometatarsus are treated is too old to be used in modern analysis (Strickland, Melville, 1848). As the part of limb directly contacting to the substrate, avian foot is of particular importance in understanding the locomotor adaptations. Any changes in locomotion would affect its morphology, muscular and ligament structure. Tarsometatarsus of the Dodo resembles those of other ground pigeon, although being stouter due to the bulk of *Raphus*. The form and position of muscles, originating on the tarsometatarsus can be reconstructed in details due to the well-pronounced relief. As in modern counterparts, the following muscles were present in Dodo: *m. flexor hallucis brevis*, *m. extensor hallucis longus*, *m. adductor digitii 2*, *m. abductor digitii 2*, *m. extensor proprius digitii 3*, *m. extensor proprius digitii 4*, *m. abductor digitii 4*. The presence of *m. lumbricalis* cannot be verified as it does not contact to the bones. The development of the mentioned muscles is typical for Columbidae, except for the larger size of *m. flexor hallucis brevis*. This muscle, supporting larger *m. flexor hallucis longus* in flexion of the hind toe, is better developed in birds with long hallux (Zinoviev, 2002). Dodos, despite their ground-dwelling habits and the lack of perching and grasping abilities, retain relatively hallux for the balance's sake. Obviously stronger muscle supply of hallux is necessary to aid in balancing of such a large bird.

References

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