Skeleton of manus of adult greater adjutant stork (Leptoptilos dubius)

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The Greater adjutant stork (Leptoptilos dubius) is a massive sized bird once abundantly available in the flood plains of Assam and very little has been studied about this bird. In the present investigation, the manus region of the bird has been studied and compared with the domestic fowl.

The Greater adjutant stork was brought to the Department of Surgery and Radiology with the fracture on the right wing. The amputated wing was collected and buried. Then the bones were cleaned with soap, water and kept for sometimes in antiseptic solution, dried and studied.

The skeleton of the manus of Greater adjutant stork had undergone considerable simplification in adaptation to flight. The manus comprised the carpus, metacarpus and digits.

The proximal row of the carpus consisted of 2 free bones, the radial and the ulnar carpals (Koch 1973, King and McLelland 1975, Nickel et al. 1977). The radial carpal articulated with both the radius and the ulna, but the ulnar carpal bone formed joint with the ulna (Nickel et al. 1977). The distal row of carpals fused with the metacarpals and formed a composite carpometacarpus.

The metacarpus of an adult greater adjutant stork consisted of the fused distal row of carpals and the metacarpal bones. The second metacarpal was the largest among the 3 (Fig. 1) being 18.5 cm long, 1 cm wide (in the middle). The third metacarpal resembles a thin bony spindle, which fused both proximally and distally with the second metacarpal encompassing a wider interosseous space (Fig. 1), the length of which was 15.5 cm and width 1.42 cm. The first metacarpal bone was a strong bony process, which projected from the proximal end of the second metacarpal bone.

The proximal articular condyles of the fused carpometacarpals was in articulation with the radial and ulnar carpals in the intercarpal articulation as reported by Nickel et al. (1977) in domestic fowl.

The manus of the adult greater adjutant stork consisted of 3 digits (I, II and III). Out of the 3 digits, the first or pollex and the third, comprised one phalanx each as reported by Nickel et al. (1977) in domestic fowl. The second digit was the well developed having 2 phalanges, as observed by Feduccia (1975) in domestic fowl.

The only phalanx of the first digit appeared thorn-shaped, having a length of 5.20 cm and width of 2.24 cm (at the base). Similarly, the first phalanx of the second digit resembled the blade of a knife with strong blade having a strong back.

Fig. 1. Manus of adult greater stork showing the digitus prima (1), second (2) and third (3) metacarpals with the prominent first (4) and second (5) phalanges of the second digits.
(Fig. 1) and a sharp edge in consonance with Nickel et al. (1977). It was 6.7 cm in length and 0.80 cm width (at the middle). The only phalanx of the third digit was also thorn-shaped like the first digit.

The second phalanx of the second digit was a pointed cone being 4 cm in length and 0.5 cm in width (at the middle).

SUMMARY

The skeleton of manus region of the adult greater adjutant stork was studied and compared with the domestic fowl. The manus comprised the carpus, metacarpus and digits.

REFERENCES


