

Defective wing development in black-headed gull (*Larus ridibundus*) – case report

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ABSTRACT: In 2000–2001 juvenile individuals of black-headed gull (*Larus ridibundus*) were repeatedly found in a Nadeje fishpond system in the Trebon Basin Area that were incapable of flying, with deformed wings. The investigation proved the rotation of metacarpal bones and luxation of the carpal joint. The Roentgen photograph did not show any consequences of any fracture, but this was evidently a post-traumatic state. A possible explanation is traumatisation of developing wings in young birds that got stuck by their wings in viscous mud around the nest colony.

Keywords: black-headed gull (*Larus ridibundus*); luxation; rotation; metacarpal bones; carpal joint

A decrease in the population density of many waterfowl species has been sufficiently studied and documented in recent years. This situation has occurred in many important bird areas with international protection, including the Trebon Basin Biosphere Reserve. One of the species with a marked decrease in population density is black-headed gull (*Larus ridibundus*): e.g. Musil (1998), Pykal and Janda (1994), Kloubec (2002). A similar state was observed in other countries (e.g. Sweden – Kaellander, 1996a,b). Anthropropic influences of fishery intensification are often mentioned as causes of this situation. These influences include some known factors, e.g. epidemic of botulism in eutrophic ponds, lack of nesting possibilities, overflowing of nests. The described case indicates another possible influence on a decrease in breeding success. In 2000–2001 some juvenile individuals of black-headed gull (*Larus ridibundus*) incapable of flying, with deformed wings, were found in nest colonies in a Nadeje fishpond system in the Trebon Basin Area. The distal part of one of the wings was unnaturally rotated and bent down. This deformation made swimming and walking very difficult. Flying was impossible. The primary pinions were rubbed off.

MATERIAL AND METHODS

A Roentgen photograph was made in a chosen individual with typical symptoms, followed by a complete dissection. The result was compared with data on the bird wing anatomy structure (Komarek *et al.*, 1982; Schwarze and Schroder, 1985 and especially Ritchie *et al.*, 1994).

RESULTS

The investigated bird showed signs of starving, evidently as a result of difficulties with food catching due to its flying incapability. The cause of the wing deformation was the rotation of metacarpal bones and luxation of the carpal joint. This rotation of metacarpal bones causes the turning of the distal part of the wing with primary pinions. The extended wing shows an unnatural angle in the carpal joint, the restoration of the normal position was impossible. The defective angle of the wing caused marked damage to primary pinions. The Roentgen photograph did not show any consequences of any fracture, but this was evidently a post-traumatic state.

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DISCUSSION

In view of repeated findings, this phenomenon does not seem accidental. The water level decreased in fishponds with nest colonies during the breeding time, which was followed by an exposure of the muddy bottom around the colony. During that time, young individuals with down (and also adult birds) were found stuck in the thick mud. Some of them were not able to disengage themselves and died. Others were caught in the mud by distal parts of their wings that remained muddy even after the birds were released. These individuals may have suffered from the trauma associated with changes described above. The young were 5–7 days old at that time.

REFERENCES

- Kaellander H. (1996a): The recent decline of the Swedish black-headed gull *Larus ridibundus* population – a special issue of *ornis svecica*. *Ornis Svec.*, 6, 1–4.
- Kaellander H. (1996b): Population dynamics of the black-headed gull *Larus ridibundus* in Sweden during the last 25 years. *Ornis Svec.*, 6, 5–16.
- Kloubec B. (2002): The abundance of the south bohemian nesting population of the Black-headed Gull *Larus ridibundus* (in Czech). *Sylvia*, 38, 75–82.
- Komarek V. *et al.* (1982): *Anatomia Avium Domesticarum et Embryologia Galli*, I, II. Priroda, Bratislava.
- Musil P. (1998): Abundance changes of the waterfowl nesting population in years 1981–1997 in the Trebon area fishponds (in Czech). *Sylvia*, 34, 13–26.
- Pykal J., Janda J. (1994): The relationship between the waterfowl abundance and the fishery management in the south bohemian fishponds (in Czech). *Sylvia*, 30, 3–11.
- Ritchie B.W., Harrison G.J., Harrison L.R. (1994): *Avian Medicine, Principles and Application*. Wingers Publishing, Inc., Lake Worth, Florida, USA.
- Schwarze E., Schroder L. (1985): *Kompendium der Gefugelanatomie*. G. Fischer Verlag, Jena.

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