

Sudden death of a flying Mute Swan (*Cygnus olor*)

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Received 7 January 1991, accepted 16 January 1991

On 17 May 1990 I was censusing birds together with Prof. Lars von Haartman in the archipelago of SW Finland, when we observed a flock of 16 mute swans (*Cygnus olor*) flying past. At first we saw nothing unusual; the swans were flying at a height of about 8 m, some 40 m away. Suddenly one of the swans lost height and fell into the water. It beat with its left wing two or three times, after which its head sank into the water and it became lifeless. We took the dead swan into the boat, and after about four hours I dissected it on shore.

The swan seemed to have been in good condition before death; no external faults were noticed. It was also examined for broken bones, but none were found. After the external examination, the swan was carefully cut open with strong scissors. The cut was made on the ventral side beginning from the cloaca and running in the anterior direction. Further, two cuts were made through the sternum, on both sides of the keel, to reveal the pericardium with the heart. The pericardial cavity was found to be filled with partially coagulated blood. The aortic arch was examined but no ruptures were found. The heart itself had a flaccid appearance, but no macroscopic rupture could be identified in the muscle. The cause of death was clearly cardiac tamponade. The most probable cause of this was a cardiac rupture, which would have been found if the facilities for autopsy had been more favourable. The other possible cause of a tamponade, haemorrhagic pericarditis, seems

less likely because of the suddenness of death, and the presence of coagulated blood.

According to Welty & Baptista (1988, see also Jones & Johansen 1972), birds in their adaptation to respiratory and circulatory efficiency have pushed their blood pressures close to the margin of mechanical safety. Several examples were given of birds dying of heart disease during exceptionally high stress. Examples of birds dying during flight were, however, not given.

The mute swan is one of the heaviest existing flying birds (up to 22.5 kg, Cramp 1985). The strain on its circulatory system is most probably great even during normal flight. The observed death of a flying swan could be an exceptional phenomenon caused by a cardiac disease, but it could also indicate the fact that high body weight sets a limit to the mechanical tenability of the circulatory system.

References

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