

Extraordinary bill abnormality in a Eurasian Oystercatcher

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Bill abnormalities are features that are outside the normal or natural shape or form for a given species. Typical abnormalities can include crossed mandibles, decurved upper mandible, upcurved lower mandible, elongation of both mandibles, or bills that are gapped or bent to the side (BTO 2017). These are rare in wild birds and are most commonly reported in passerines (Pomeroy 1962, Craves 1994, BTO 2017). In a review of avian bill abnormalities, Pomeroy (1962) estimated that less than 1% of individuals are affected.

On 21 May 2012 a Eurasian Oystercatcher *Haematopus ostralegus* with a remarkably long bill was observed feeding on mudflats at North Bull Island (53.3705° N, 6.1440° W) in Dublin Bay, Ireland (Fig. 1). Comparisons made with photographs of 'normal' Eurasian Oystercatchers suggest the bill was at least 150–160 mm in length, approximately twice the average for this species of 76–81 mm (Hockey *et al.* 2017). The bill appeared to be undamaged, very straight but thinner near the tip. Based mainly on direct observation of the bird feeding and rather poor quality photographs, there appeared to be a very thin gap between the upper and lower mandibles. The age of the bird could not be determined with any degree of certainty due to conflicting features. If its age was based solely on the absence of a white neck collar, it could be argued that it was an adult. However, Dare & Mercer (1974) have demonstrated that some adults and a small proportion of 'immatures' can lack any trace of a white collar. Unfortunately the colour of the legs and the distal portion of the bill could not be determined as both were covered in mud. The late May observation date, combined with what appeared to be dropped innermost primaries, suggest the bird may have been a second or third calendar year (Ginn & Melville 1983). Potentially this explains why there was a limited extent of orange colour on the bill in addition to the worn condition of the flight feathers, although it is also possible that poor feather condition may have been in part due to the bird's inability to preen regularly or effectively with this long bill.

Although the observation time was quite brief, it appeared that the bird fed at a slightly more acute angle than other Eurasian Oystercatchers present. This may have been done to compensate for its inability to raise its body and head high enough to get this long bill into a position to probe vertically into the sediment. Compensatory feeding behaviour of birds with deformed beaks has been noted in passerines (BTO 2017).

Pomeroy (1962) found only six examples of Eurasian Oystercatchers with bill deformities. Three of these had



Fig. 1. Eurasian Oystercatcher with exceptionally long bill in Dublin Bay, May 2012.

bills that were crossed and curved, and one was reported to have received shot-gun wounds at the base of each mandible, both of which were overgrown and crossed at the tips. More recently, Eurasian Oystercatchers with elongated bills have been reported in Belgium in 2001 and France in 2013 (C. Van Hemert pers. comm.). Although noteworthy bill deformities appear to be extremely rare in oystercatchers, it is possible that others occur but are not documented. More commonly, minor but regular changes in bill morphology of up to 5 mm have been correlated with seasonal shifts in diet as the birds switch to forage in different sediment types (Hulscher 1985). These minor changes were found to have strong fitness consequences for birds over their lifetimes in a long-term study of Eurasian Oystercatchers in the Dutch Wadden Sea (van de Pol *et al.* 2010).

Within the last two decades, there has been a notable increase in the number of birds and species reported with bill deformities (Handel *et al.* 2010, BTO 2017, Handel & Van Hemert 2017). Precisely what is causing this recent phenomenon is uncertain but may include genetic inheritance, exposure to environmental contaminants, and nutritional deficiencies (BTO 2017). More recently, the poecivirus, a novel picornavirus found in North American passerine species, has been suggested as a likely cause of what is generally referred to as Avian Keratin Disorder (AKD; Zylberberg *et al.* 2016). It has yet to be established if there is any link between this virus and bill deformities in non-passerine species in North America or birds with similar conditions in northwest Europe.

Although it is not possible to determine what caused this oystercatcher to develop this oversized bill, the length is unquestionably at the extreme end of the spectrum. Bill length and size in oystercatchers are a function of both abrasion and growth, and are likely to vary according to feeding method and substrate type. Durell *et al.* (1993) reported that oystercatchers with pointed bills fed predominantly on worms and clams on mudflats, while birds with chisel-shaped bills were mussel stabbers, and birds with blunt bills were mussel hammerers. The fact that this bill has remained unbroken would suggest that the bird fed mainly on soft substrates and avoided stabbing and hammering. It is also possible that this bird's bill was particularly strong. Despite the practical problems posed by this long bill, it did not appear to impact on the bird's ability to survive on a daily basis, although it is unknown whether the individual performed as well as the 'typical' oystercatcher over its lifetime.

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