Were Slender-billed Curlews Numenius tenuirostris once common in The Netherlands, and do they have patches of powder feathers?

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Short communication

Were Slender-billed Curlews *Numenius tenuirostris* once common in The Netherlands, and do they have patches of powder feathers?

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In modern ornithology, the use of oral traditions as sources for fact-finding about birds is rare. Nevertheless, when it comes to reconstructing the abundance, distribution and life-history of extinct or nearly extinct bird species, anecdote and 'oral' history may be an important source of information (e.g. Jukema & Piersma 2002). The Slender-billed Curlew *Numenius tenuirostris*, which is now classified as of 'critical' conservation status (BirdLife International 2000) and as Europe's rarest bird species, is a case in point (e.g. Danilenko *et al*. 1996, Baccetti 2001). From unspecified breeding areas in central or south-west Siberia, Slender-billed Curlews migrate west- and south-westwards to coastal wintering areas in the Middle East and the Mediterranean (Gretton 1991, Piersma *et al*. 1996). In this contribution we summarize and interpret the spoken account of Pieter Mulder (1921–1999) as it was related to us in February 1999. Pieter Mulder's story suggests that Slender-billed Curlews (1) may have been regular winter visitors to the Zuiderzee area before closure with a dam (the 'Afsluitdijk') in 1932, and (2) may be unique among shorebirds in possessing patches of fat-producing powder feathers.

THE ACCOUNT OF PIETER MULDER

The youngest, and by early 1999 the only survivor, of the five sons of a professional hunter, Pieter Mulder had reached 11 years of age when the Frisian town of Hindeloopen (52°56′N, 5°24′E), then a fishing port on the Zuiderzee, lost its marine connection with the completion of the Afsluitdijk. Pieter's father Albert was a specialized netter of Golden Plovers *Pluvialis apricaria* (a 'wilsternetter', see Jukema *et al*. 2001) and a hunter. Despite contemporary Dutch regulations that had all *Numenius* species protected, Albert Mulder sometimes shot curlews for consumption by his own family. The curlews in winter came in two types unrelated to age or sex: the inland-dwelling 'wettergulp' that only occurred in coastal saltmarshes at night at roost and the 'pikgulp', a much smaller curlew of a size similar to Black-tailed Godwits *Limosa limosa* that never ventured inland. As a boy, Pieter used to pluck the curlews before they were cooked in a large pot with skin and all. In case the bird was a 'pikgulp', he had to make quite sure to remove a pair of small 'oily glands' on the lower abdomen, otherwise the curlew-stew or soup would have an unpleasant oily taste. These 'glands' were indicated by patches of oily feathers that according to him resembled the much larger areas of powder down on the belly of Grey Herons *Ardea cinerea* (a species also sometimes poached for the pot). Using a dead Eurasian Curlew *Numenius arquata*, Pieter demonstrated to us how he removed the two small glands: almost casual, with a half-circular move of the point of a kitchen knive, as if removing a bad patch in a potato during peeling. Pieter thought nothing special about the small curlews with paired oily glands, other than that, unlike the larger 'wettergulp' that is still present, the 'pikgulp' had completely disappeared after 1932 when the tidal Zuiderzee-estuary became a stagnant freshwater lake, the IJsselmeer.

DISCUSSION

Three features of relatively small curlews with oily glands make us believe that the account refers to the Slender-billed Curlew. (1) The congruent provenance between the small curlews regularly obtained by the Mulder family and the 11 officially recognized Dutch and Belgian specimens of Slender-billed Curlews from 1800 to 1996 (van den Berg & Bosman 2001) in terms of the time of year (November–February) and habitat (shoreline or saltmarsh habitats). Note that seven of the eight known Dutch specimens are from before 1925; the last specimen was found dead at the Wadden Sea coast of Wieringen on 23 January 1947 (van IJzendoorn 1948, 1951). Indeed, the four finds in Fryslân made between 1889 and 1925 all refer to commercial captures with low 'mist'-nets ('staltnetten') in the saltmarsh area along the Zuiderzee (van der Ploeg *et al*. 1977). (2) 'Pikgulp' occurred in winter rather than in late spring or summer, and therefore they are unlikely to refer to Whimbrel *Numenius phaeopus*, a similarly sized species that is absent in The Netherlands from November to March (Bijlsma *et al*. 2001). Indeed, all 47 Whimbrels (36 adults, 11 juveniles) present in the zoological collections in Leiden and Amsterdam come from July–September and (late) April–May, although they show a large overlap in

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years of collection (C.S. Roselaar pers. comm.). Thus, they do not overlap with the months of collection of Dutch Slender-billed Curlews. Given that the wilsternetters were generally keen observers of plumages who were able to distinguish subspecies of Common Redshank *Tringa totanus* before they were described by science (Jukema *et al*. 2001) and distinguished Pacific Golden Plovers *Pluvialis fulva* from Eurasian Golden Plovers on the basis of plumage and size (Jukema & Piersma 2002), we would also have expected Pieter Mulder to comment on the dark-striped head of the Whimbrel. (3) 'Pikgulp' were restricted to the saltmarsh and the intertidal zone and never occurred in freshwater inland habitats such as the wet meadows frequented by Eurasian Curlews then and now. This is consistent with the estuarine habitat choice reported for the small numbers of Slender-billed Curlew observed in recent times (e.g. Gretton 1991).

Three factors may explain why it was never realized that Slender-billed Curlews may have been normal winter visitors to The Netherlands. (1) The extreme rarity of winter visits of (usually city-bound) ornithologists to the remote areas around the Zuiderzee before 1932. (2) The apparently restricted distribution of 'pikgulp' to the inaccessible saltmarshes, the complete lack of communication (owing to differences in social class) between the poachers and hunters and any visiting ornithologists (ten Kate 1936), combined with (3) the fact that the few people who might have known are now long dead. Pieter Mulder realized very well that he was the last to know the, to him, perfectly normal biological fact of the distinction between two common curlew types occurring in winter, 'wettergulp' and 'pikgulp'.

Their resemblance to the similar but larger paired integumental structures of Grey Herons suggests that the two oily glands of the 'pikgulp' represent two small abdominal patches of powder feathers. Powder feathers are modified feathers that grow continuously and then shed an extremely fine powder consisting of granules of keratin (Stettenheim 1972). In some species of pigeon and in herons, the feathers have the structure of down but the powder can also be produced by the lower (downy) portions of 'normal' contour feathers. Some pigeons show highly modified powder feathers, 'oily structures' that produce a fatty substance instead of powder (Stettenheim 1972, P. Stettenheim & G. Menon pers. comm.). It is generally assumed that the hydrophobic nature of the product of powder feathers helps birds to maintain waterproofing.

To verify the presence of powder feathers, we carefully investigated the stuffed specimen of a Slender-billed Curlew in the collection of the Fries Natuurmuseum in Ljouwert, a bird collected on 16 January 1925 (see van den Berg & Bosman 2001 and Jukema *et al*. 2001 for photographs). On the exterior, no signs of patches of special feathers could be found. Neither were any clear traces of anything special seen on the inside of the skin of the belly after it was carefully removed from the mount. And no traces of patches of powder feathers could be found on the exterior of four stuffed specimens in the collection of the Istituto Nazionale per la Fauna Selvatica in Bologna, Italy (L. Serra pers. comm.). Our inability to confirm the presence of fatty powder feather patches may, however, be explained by the tendency of taxidermists to carefully clean away (dirty) oiled feathers or indeed remove entirely from the skin any 'annoying' oily parts (sometimes the entire regions of powder down in herons).

Powder feathers are not known from any sandpiper (Scolopacidae) or plover (Charadriidae), but have been found in the Charadriiform families of seedsnipes (Thinocoridae, genus *Attagis*) and thick-knees (Burhinidae) (Schüz 1927). That various forms of powder feathers commonly occur in the integument of herons (Ardeidae) and pigeons (Columbiformes), groups that according to some recent phylogenetic interpretations share close evolutionary ties with the shorebirds and other Charadriiformes (Cracraft 1988, Tudge 2000), may make it more reasonable that such a strange morphological feature 'suddenly' appears in a single member of a genus and family. If the genetic blueprint for powder down is present in all Charadriiformes and associated orders, it may just need a developmental genetic switch (a mutation in a developmental gene, Rollo 1994) for powder feathers to show up (see Kollar & Fischer 1980 for an example in which Domestic Chickens *Gallus gallus* were induced to develop teeth [from dinosaur times] in their bill). Nevertheless, the functional reason for this to occur in Slender-billed, but no other curlew species, represents a true riddle. In any case, the occurrence and detailed morphology of the paired oily glands/powder feather patches in (new) specimens of Slender-billed Curlew now requires attention.

If the identification is correct, it is likely that Slender-billed Curlews were regular or even rather common winter visitors to The Netherlands, an area that is several thousand kilometres north and north-west of the Mediterranean and Middle East regions traditionally assumed to represent the wintering grounds. From a Dutch perspective it is somewhat ironic to realize that the closure of the fascinating and perhaps rather undervalued estuary of the Zuiderzee may have been one management step toward extinction of what may be a more remarkable curlew than we previously thought.

We thank the late Pieter Mulder for his willingness to endure our surprising curiosity about birds he thought nothing special of other than that they no longer occurred locally. The staff of the Fries Natuurmuseum in Ljouwert accepted a very close scrutiny of their single specimen of the Slender-billed Curlew. Lorenzo Serra kindly checked specimens of curlews and herons in Bologna for patches of powder feathers. We thank Walter J. Bock and Peter Stettenheim for promptly answering queries about the occurrence of powder feathers among bird taxa and Kees Roselaar for information on museum specimens.

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