PETER RYAN

ageing SHY ALBATROSSES

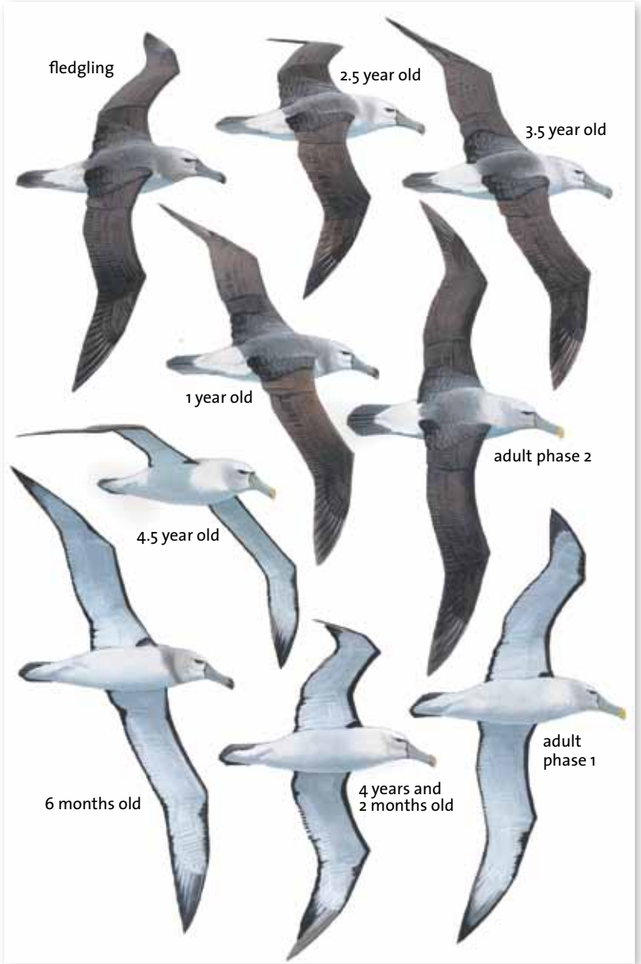
Shy Albatrosses are usually the albatrosses most frequently encountered on pelagic trips off the south-western Cape. Scilly seabird fundi **Bob Flood** and **Peter Ryan** look at Shy Albatrosses from a southern African perspective and describe how the species can be aged up to five or six years old based on a combination of primary moult and wear, plumage and bill colour. >

ROHAN CLARKE

above *An adult Shy Albatross showing the yellow base of the upper mandible typical of the Tasmanian population (off Victoria, Australia, 8 November 2009).*

right *John Gale's artwork captures the progression of Shy Albatross plumages in flight from fledglings to adults. Note especially the pattern of wear in the outer primaries (see text for details).*

previous page *Juvenile Shy Albatross showing uniformly fresh plumage within two months of fledging (off Cape Town, 20 September 2005).*



JOHN GALE

THE LARGEST of the mollymawks, the Shy Albatross *Thalassarche cauta* was split from Salvin's Albatross *T. salvini* and Chatham Albatross *T. eremita* in the 1990s based on consistent genetic and morphological differences.

Shy Albatrosses breed in Australia and New Zealand. The Tasmanian Shy Albatross *T. [c.] cauta* breeds from September to April on three islets off Tasmania, whereas the White-capped or Auckland Shy Albatross *T. [c.] steadi* breeds from November to July on New Zealand's sub-Antarctic islands (almost all at the Auckland Islands, with a few pairs on the Antipodes and Chatham islands).

The Tasmanian Shy is on average slightly smaller than the Auckland Shy and adults tend to have more yellow on the base and cutting edge of the upper mandible. However, their genetic difference is minor and most authorities regard them as subspecies. The New Zealand form is far more abundant, with an annual breeding population of close to 100 000 pairs, compared to some 12 500 pairs in Tasmania, where numbers are recovering from past exploitation. Both taxa reach southern Africa, but genetic studies show that Tasmanian birds comprise only six per cent of birds killed on long-lines off South Africa. This suggests that New Zealand birds are about twice as likely as their Australian cousins to travel west from their natal islands into the south-western Indian and South Atlantic oceans.

Shy Albatrosses are found year round in shelf waters off southern Africa, ranging further north in winter, and also occur at low densities in oceanic waters south to at least 47°S. Off the Western Cape, adults comprise 10–15 per cent of the population in summer and 30–40 per cent in winter. Juveniles in fresh plumage, with their smoky grey hoods, arrive each year in the Cape in late winter (August), often sparking debate about possible Salvin's Albatrosses. For most of the year, though, we tend to pay little heed to their plumage development or state of moult. Yet changes in plumage and bill coloration, moult and wear can be used to age birds up to five or six years old.

MOULT

Shy Albatrosses moult in cycles. The adults normally follow an annual cycle, related to their breeding activity, whereas it's probably only by about the fifth cycle that immatures synchronise the timing of their moult cycles with adults; before that they follow an annual cycle only approximately.

PETER RYAN

The *first moult cycle* involves a complete moult in the nest, producing juvenile plumage.

The *second and subsequent cycles* involve moult of head, body and tail feathers.

The *third and subsequent cycles* involve wing moult.

The pattern of outer primary wear is key to ageing. The third, fifth and seventh moults include the renewal of P8–P10 (where P10 is the outermost primary), but not P5–P7, which are replaced in the fourth and sixth moults. This pattern of middle and outer primary moult continues into adulthood. Hence, from the third moult onwards moult contrast is evident between P5–P7 and P8–P10. There are exceptions, but the general pattern mainly stands up.

Secondary moult is complex and even more protracted than primary moult, with some heavily worn juvenile feathers remaining into at least the fourth cycle. This results in an irregular trailing edge to the inner wing, notably in fourth-cycle birds.

TIMING OF MOULT

Moult in the Shy Albatrosses is poorly known. We analysed about 400 photographs of birds taken off South Africa and elsewhere, as well as fisheries bycatch data from 584 birds killed on long-lines off southern Africa (data analysis to be published). As expected, breeding adults moult mainly in the non-breeding season, which off South Africa is chiefly August to October/November (range April to December). Adult *T. [c.] cauta* breed earlier and probably moult earlier than New Zealand birds; five individuals photographed off Australia were in active primary moult during April to June. Immatures, and presumably non-breeding adults and failed breeders, moult earlier than successful breeders, with immatures off South Africa moulting mainly from December to June.

AGEING

Primary moult and wear, head and neck plumage and bill colour age individuals up to five or six years old (see plates). When describing albatross plumages, it is conventional to age birds from the date that they fledge: May for *T. [c.] cauta* and August for *T. [c.] steadi*.

First cycle

Moult/wear Juveniles fledge with evenly fresh plumage, although some feathers may show wear from the nest. There may be limited head and body moult subsequently, but in the first nine months after fledging virtually all feathers are of the same generation. The grey upperside feathers slowly bleach browner with age and lack moult contrast. *Head & neck* Variably smudged mid-grey on the head and dark grey on the neck. The head feathers quickly fade, leaving a whitish chin, face, forehead >

Third-cycle Shy Albatross about 2.5 years old, with fresh outer primaries that contrast with old, heavily abraded juvenile middle primaries. The yellowish bill tip with large dark marks is typical of a young immature (off Cape Town, 30 December 2008).

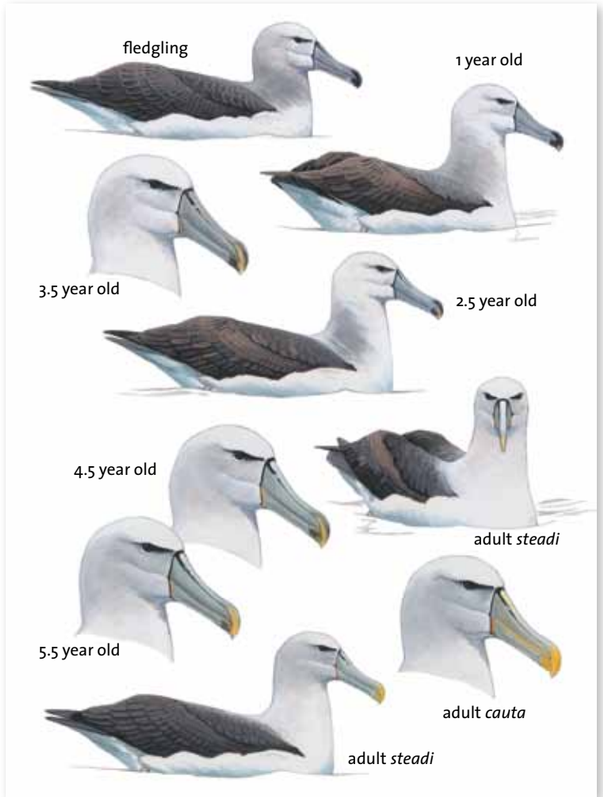
and crown, a mid-grey hindneck shawl and a more or less complete neck collar. Dark grey triangular eye patches nearly reach the bill, standing out when the head fades to whitish. *Bill* Mid-grey with a blackish tip, which may develop a hint of pale on the hook. Narrow dark line down the base of the lower mandible.

Second cycle

Moult/wear Head, body and, at least in some birds, tail moult should be evident by 12 months after fledging. The juvenile upperwings bleach browner with age and contrast with the fresh mid-grey back feathers. In the second-cycle juvenile outer primaries often become badly frayed. They might be taken as a generation older than the middle primaries and this incorrectly ages the bird as older than second cycle, but there is no abrupt change in wear across the primaries. *Head & neck* Similar to old first-cycle birds though variably greyish when fresh, with a mid-grey hindneck shawl and a neck collar (narrow or broken at centre). Triangular eye patches prominent on the whitish head. *Bill* Similar to first-cycle birds, but the bill tip often develops a paler hook.

Third cycle

Moult/wear The first moult of outer primaries P8–P10 probably takes place 16–20 months after fledging, during December–May in *T. [c.] steadi* and earlier in *T. [c.] cauta*, giving strong contrast with juvenile middle primaries P5–P7. Secondaries are all or mostly juvenile, worn and bleached. *Head & neck* Paler than second-cycle birds, usually with an incomplete neck collar and a whitish lower hindneck. Triangular eye patches are better developed and stand out on the whitish head. *Bill* Light to mid-grey with a dirty yellowish tip and large dark marks on both mandibles. Narrow dark or yellowish line down the base of the lower mandible.



JOHN GALE

Ageing birds sitting on the water is more difficult than birds in flight. Fledglings have evenly fresh plumage, whereas second-cycle one-year-olds have fresh grey body feathers that contrast with the paler brown juvenile wing feathers. The juvenile's mid-grey bill progressively becomes light greenish, and the blackish bill tip gradually loses the dark markings and becomes yellow.

Fourth cycle

Moult/wear First moult of P5–P7 occurs towards the end of the third year since fledging, giving moderate contrast with third-cycle P8–P10. Many heavily worn juvenile secondaries give an irregular trailing edge to the inner wing. *Head & neck* May retain an incomplete neck collar, though some show first real signs of the adult-like head pattern. Triangular eye patches further developed. *Bill* Light grey with a dirty yellowish tip still retaining dark marks on both upper and lower mandibles. Narrow orange line down the base of the lower mandible.

Fifth cycle

Moult/wear Timing of primary moult probably synchronised with adults and includes P8–P10, giving moderate contrast with fourth-cycle P5–P7. A few heavily worn juvenile secondaries may be retained. *Head & neck* Adult-like head pattern, gaining a silky look, though not pristine like an adult. Larger triangular eye patches. *Bill* Light grey tinged greenish-yellow. Tip yellowish with a small dark mark on the lower mandible. Narrow orange line down the base of the lower mandible.

Sixth cycle

Moult/wear Timing of primary moult is as for adults and includes P5–P7, giving moderate contrast with fifth-cycle P8–P10. *Head & neck* Adult-like, but perhaps not as clean and fresh. *Bill* Adult-like, but often with a smallish dusky mark on the lower mandible.

JOHN GRAHAM

Fourth-cycle Shy Albatross about 3.5 years after fledging; fresh middle primaries contrast with worn outer primaries. The head is adult-like, but the bill shows vestiges of immaturity (off Cape Town, 4 December 2010).

Seventh (first adult) cycle

Moult/wear Primary moult includes P8–P10 mainly during the three to four months after the breeding season, giving moderate contrast with sixth-cycle P5–P7. *Head & neck* Soft and silky, light grey with white chin, forehead and crown. Soft dark triangular eyepatches nearly reach the bill, giving Shy's distinctive capped appearance and stern look. *Bill* Light greenish-grey with a yellow tip and an orange line at the base of the lower mandible. *T. [c.] cauta* breeders, and possibly non-breeders, have on average a yellower bill, with yellow basal third of culminicorn (reaching nostrils), and yellow cutting edge to the upper mandible. A dusky mark on the lower mandible may be present into adulthood.

Southern Africa is truly fortunate to have productive feeding grounds for albatrosses and petrels within the reach of short-range pelagic trips, and on such trips it is the Shy Albatrosses that are the most frequently encountered mollymawk. While fresh-looking juveniles and smart adults are usually the focus of binoculars and cameras, the new ageing criteria given in this article should make worn and moulting immature birds of equal interest. ◆

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