

ALBATROSS NATURAL HISTORY

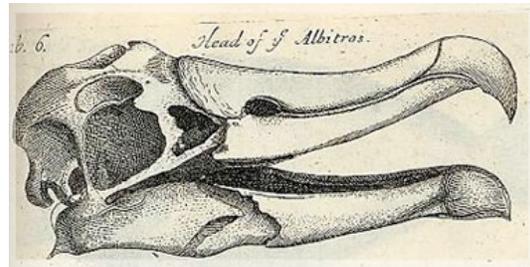
Albatrosses In History

Albatrosses have always featured in art, literature and science from their very first description by early sailors. Scientists identified each new species as it was discovered, poems were written and the name albatross was given to some of man's best technical achievements. This timeline picks out the highlights over the last 400 plus years.

1593 Sir Richard Hawkins describes seabirds seen on his voyages 'certain great fowles as big as swannes, soared about us... from the poynt of one wing to the point of the other, both stretched out, was about two fathoms'

1672 John Fryer recorded 'albetrosses' during a voyage to India: 'We met with those feathered Harbingers of the Cape... Albetrosses. they haue great Bodies, yet not proportionate to their Wings, which mete out twice their length.'

1747 George Edwards's *Natural History of Birds* features an accurate drawing of an albatross



1798 Samuel Taylor Coleridge publishes *The Rime of the Ancyent Marinere* and amends the title to the more familiar one, *The Rime of the Ancient Mariner*, in a later edition.

1856 The 'Albatros' glider constructed by French sailor Jean Marie Le Bris.

1882 August, US marine research vessel *Albatross* launched. The first research vessel of its kind, it was steam-driven and equipped with electric lights.

1915 German biplane *Albatross* first manufactured - used by Baron von Richthofen

1928 WG Alexander's *Birds of the Ocean* published, the first guide to all of the world's seabirds containing 13 albatross species

1937 De Havilland passenger plane DH91 *Albatross* first flown

1949 Short-tailed albatross declared extinct (prematurely!)

1966 IUCN publish their first Red Data list of the world's endangered birds, including one albatross species: short-tailed

1968 November 22, Fleetwood Mac release their hit single *Albatross*

2004 IUCN publishes Red List with 19 albatross species listed as critical, endangered or vulnerable

How Albatrosses Fly

Albatrosses are famous for their powers of flight, in particular their ability to endlessly glide low over the waves, without flapping.

Albatrosses use a technique called 'dynamic soaring', using the different wind speeds that occur at different heights. Cutting through the wind speed gradient enables them to gain height when gliding into the wind while turning and flying downwind, losing height, gives them extra speed.



As it glides along, losing height the albatross turns into the wind which lifts it above the next wave, to a height from which it glides down between waves to turn again and repeat the process. This is why albatrosses rise and

fall as they fly over the oceans, their wings held out stiffly. It also means that they are not simply blown along by the wind but can actually fly faster than the wind's speed.

Their long wings are designed to enable them to make the most of these differing wind speeds, but only if they keep them still. They do this by locking their shoulders into position allowing the muscles, which would otherwise be holding the wing horizontal from the body, to rest.

If they try to flap their wings, they encounter so much resistance from the air that they soon tire. This means that in wind speeds of below about 18kph, they are forced to sit on the water or remain stranded at their island breeding sites. In severe storms, winds may be too strong for them to fly, forcing them to sit on the water, waiting for the weather to improve.

An albatross's take-off is an embarrassingly clumsy affair. On land they have to run, using a 'runway' area of flat open ground, usually placed on the windiest part of the breeding island, and sloping downhill to increase speed. They face downhill, into the wind, and start a headlong run with wings outstretched, this combined with a couple of flaps, usually gets them into the air.

Take-off from the water may involve some mad paddling across the surface before the wind lifts them. One light-mantled albatross was seen pattering across the surface for two kilometres before managing to lift off.

When landing on water they use their large webbed feet to touch down and 'ski' to a halt; on land they use their tails and webbed feet as 'air brakes' and, if they are still too fast when they land, they may topple forward rather comically onto their beaks!

Albatross Beaks

Albatrosses have large, long, hooked beaks, each made up of 12 distinct plates. Made of keratin, they are dark in young birds, but gain colouring as the birds mature, attaining bright yellow and orange colours in some species.

The bills of the 'great' albatrosses - wandering and royal - can change from bright pink to white as blood vessels beneath the bill constrict or dilate. Adult grey-headed and yellow-nosed have bright yellow stripes along the edges of their beaks.

The beak is strong and sharp-edged, with a stout hook at the end of the upper mandible, ideal for grabbing hold of slippery fish and squid. On the sides of the beak there are tubular nostrils with grooves running along the length of the bill to the tip.



Albatrosses have salt-excreting glands in their heads and when their salt intake is so high that their kidneys cannot handle it, excess salt is discharged from these glands, flowing out through the nostrils and down the bill, dripping off the hooked tip. In black-footed albatrosses, each nostril is divided into two openings, one for excess salt and the other for incoming air.

They have large olfactory lobes, indicating that they have a well-developed sense of smell; this may help them to detect distant food sources. It may also help them to recognise each other at the breeding colony; albatrosses have a distinct musty odour that comes from their strong-smelling stomach oils.

When above water, albatrosses breathe through their nostrils and when diving, a valve stops water passing through into their airways.

Despite having such large beaks, albatrosses can use them very delicately. Visit an albatross breeding colony and you will usually see pairs preening one another. This mutual preening, or 'allopreening', is an important part of their courtship and helps to establish and maintain the pair bond. It takes place with such gentleness that it is difficult not to interpret it as 'loving'.

Beaks also play another part in some albatross display as birds will touch or clatter beaks as a form of greeting when an individual returns to its nest and mate.

The beak can also be used aggressively and any threat to an adult at its nest will usually cause it to open its beak wide as a threat. An intruding albatross may be grabbed around the neck and is only released when it submits.

How Albatrosses Eat

Most breeding birds share responsibility for incubation of their eggs and change over at the nest regularly to allow each partner to feed. When the young hatch, the parents travel back and forth to their nest many times a day with food.



Albatrosses, however, are completely different - they spend many days at feeding at sea, often thousands of miles away from the nest, before returning to their mate or chick. So how do they manage this and how on earth do they store all the food they have eaten?

The digestive system of albatrosses and petrels has an upper stomach, or proventriculus, into which all of the food passes for initial digestion. Squid, fish, krill and other items on the albatross menu are broken down into a mixture of water, fats, proteins and everything else. The oil layer floats to the top, while water-soluble proteins and other compounds settle to the bottom.

The lower water layer is allowed out of the upper stomach into the lower gut that then continues to digest and absorb it in the normal way, making room for more food. When the bird is finally full, it returns to its island home.

The oil is a ready source of energy and small amounts of it can be allowed to trickle through to be fully digested by the parent. It can also easily be regurgitated as food for the youngster. This means that the chick can be fed, while the adult has enough energy for itself, not needing to feed again for several days, allowing its partner to fly off and feed before changing places again.

But there is another use for this oil... defence! Petrels and albatrosses can regurgitate foul-smelling oil from their stomachs as a means of protection. Adult albatrosses rarely use this method, as they can ward off enemies with their beaks and wings. Young chicks, however, if alarmed will readily eject large quantities of this half-digested food, given to them by their parents.

The oil is a rich, pungent and sticky fluid, an effective defence, as it will stick onto the fur or feathers of a predator and is difficult to remove, as well as being evil-smelling. It will coat the fur or feathers causing a loss of insulation and waterproofing properties that, in a cold and wet environment, can prove to be lethal.

Source: <http://www.savethealbatross.net/>