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1

LIFE BETWEEN TWO WORLDS

Tui De Roy







Penguin Seasons: The Cycle of Life

It is early March deep in the Ross Sea of Antarctica, the end of the brief southern summer. The sky hangs low, heavy with inky-purple clouds, snow flurries skirmishing on the horizon. A fresh dusting already covers the still-sodden ground, and a rampart of jagged ice slabs — the remnants of once-smooth sea ice now driven ashore by angry waves — thumps heavily upon the black volcanic beach, grinding and creaking. Throughout this otherworldly scene thousands of little black-and-white figures run about, stumbling and scuttling, hopping and screeching, all heading toward the open water beyond the ice. Tens of thousands more surge forth from the hinterlands, flowing like rivers across the flats, and more still tumble down the steep icy slopes farther back.

Winter exodus

Cape Adare is home to the world's largest nesting colony of Adélie penguins, the southernmost of all penguin species. In a good year, a quarter of a million young penguins leave these shores, anxious to start a

new life at sea, a life of which they know nothing but the general notions their instincts dictate. Wide-eyed, most of them still sporting topknots and ragged tufts of fluffy down from their short babyhood, they are rushing into the unknown, about to undergo a change in lifestyle almost as drastic and wondrous as a caterpillar's metamorphosis into a butterfly, or a dragonfly nymph suddenly rising into the wind from swampy reed beds. The chicks' down, an efficient insulation only when dry, is just being replaced by new waterproof coats of feathers designed to keep them warm and dry underwater. The young penguins are only about 80% of their full-grown size and weight, but they're ready.

I sit and watch quietly for a while. More throngs gather, urged onward by the shrill calls of departing adults already beyond the ice barrier, porpoising and splashing through leads of dark water. The chicks clamber awkwardly onto rocking grounded bergy-bits, slipping and falling. Despite these difficulties, their eagerness to start travelling remains undampened,

ABOVE Swapping incubation duties, a King penguin pair gingerly rolls their precious egg from one set of feet to the other, Falkland Islands.

LEFT Porpoising at full speed, homeward bound Gentoo penguins swim through clear Falkland Islands waters.

PRECEDING PAGES Under the midnight sun, a lone Emperor penguin marches past entrapped icebergs over the frozen sea to reach the Kloa Point colony in East Antarctica.



ABOVE A pair of courting Emperor penguins perform a 'slow bow' display, Weddell Sea.

BELOW Northern rockhoppers dry off after coming ashore, Nightingale Island, Tristan da Cunha.

BELOW RIGHT A male Adélie penguin advertises by 'sky-pointing' in the middle of the colony. Others around him are incubating, hunkered down against a blizzard, Weddell Sea.

as if their life depended on it. Which of course, it does. Their boundless excitement, their dogged determination, mounting as their numbers swell by the shore, becomes contagious. I feel that if they can succeed in making it through this coming of age, then no challenge would ever be too great to undertake.

Of course, many won't make it; that is the story of life on earth. Already a few dozen bedraggled stragglers — hatched just a little too late, or whose parents didn't find them quite as much food as their more experienced neighbours — sit back bewildered on their pebble nests, bereft of protective parents and neighbours. Lacking the plumage needed to take to sea, they are doomed as predatory skuas and giant petrels move in.

For those who are departing, the first hurdle comes at the overhanging ice edge, where they now catch their first glimpse of seawater. Utterly inexperienced but gung-ho nonetheless, they launch themselves, some headfirst, some feet first, but most just plain helter-skelter. Regardless, when they hit the water — oh surprise — they actually don't know how to swim. Wave after wave of young penguins plop into the sea, only to founder and flail, little flippers furiously flapping as they try to heft their bodies onto the surface of the water, rather than diving through it. Only when, after long minutes of no progress, they accidentally submerge do they suddenly discover what those fantastically adapted 'wings' were made for: underwater flight. From now on, they will only emerge briefly to breathe, and to preen and to replenish the air cushion trapped within their dense feathers.

All around Antarctica, similar scenes are taking place. The great Adélie penguin exodus is under way everywhere. Like human refugees fleeing from natural calamity, they must head north, staying slightly ahead of the big winter freeze. Chinstrap penguins are doing likewise along the Antarctic Peninsula and

adjacent islands, several degrees of latitude short of the polar circle and many thousands of kilometres from here. They will move to the open pack ice edge, their preferred winter habitat. And all around the girdle of subantarctic islands still farther north, millions of crested penguins of different species will shortly also be departing.

Amazingly, two species of penguins will move in the opposite direction from all others, heading south into winter darkness. King penguins nest along the periphery of Antarctica on islands strung close to the rich oceanic mixing zone called the Antarctic Convergence, or Polar Front. They breed year-round regardless of season because their large, slow-growing chicks need almost a year to fledge, but in winter the parents leave them unattended for several months, moving down to the edge of the pack-ice to feed. Here they may well rub shoulders with their giant cousin, the Emperor penguin, whose life habits in turn reach even greater extremes. As we will see in greater detail later in this book, the Emperor defies all rules by heading south into the depth of the Antarctic winter to lay its eggs and raise chicks perched on the surface of the frozen sea.

What makes a penguin?

Regardless of range and nesting habits, all penguins must undertake that great leap of faith, that biological dichotomy that is the difference between life at sea, for which they are superbly suited, and breeding on land, a task they tackle with remarkable ability and zest, considering that their body plan has not prioritised adaptations to function well in this environment.

Ashore, penguins remind us of ourselves in an amazing variety of ways: stance, gait, attire, personality, sociability, curiosity, hyperactivity and, of course, short tempers. But the projection of our own attitudes, which has endeared penguins to most





humans and indeed found them a special place in our hearts, should never overshadow the wondrous animals they are in their own right: Extraordinary beings that abandoned the traditional lifestyle of birds not long after these had begun taking to the air, and headed back into the life-giving sea somewhere around the time of the dinosaurs' abrupt demise.

At sea, a penguin's greatest metabolic preoccupation is to keep warm, but on land very often the opposite applies. To achieve both, it is equipped with a remarkable array of adaptations. Densely packed, impermeable feathers that fit together like scales — the densest plumage of any bird — trap air in a plush layer of down undercoat, much like a diver's neoprene dry suit worn over fleece undergarments. This insulation is further backed up by a generous layer of fat beneath the skin acting as an additional thermal barrier. Yet on land, where overheating is a real threat, the feathers may be raised to allow free airflow between them, while panting for evaporative cooling

from the throat lining partially makes up for that blubbery subcutaneous envelope.

Penguin thermal controls do not stop there. A complex counter-current heat exchange circulatory system, including blood vessels that run in grooves along the wing bones, allows warmth to be shunted back to maintain a steady body core temperature while flippers and feet can be nearly as cold as the surrounding water. But on land the mechanism can be inverted, so that hot blood flushes to these scantily feathered extremities, turning them bright pink during hot weather or heavy exertion as excess heat is vented away.

Even penguin locomotion is twofold and fully amphibious. Those perfect appendages, super fit for rapid and agile underwater travel — flippers for propulsion and feet for steering — can quickly swap roles upon making landfall. Now wings serve for balance only, whereas those stubby feet become sturdy boots, armed with sharp crampons for ice travel

ABOVE King penguins stand tall during a group courtship session on the green spring grass at Volunteer Beach, Falkland Islands.



ABOVE As dusk falls, a slow exposure outlines the movements of breaking surf and beach-landing Southern rockhopper penguins, Saunders Island, Falkland Islands.

and, in some species enable a springy pogo-stick-like bounce for jumping several body-lengths amongst large boulders.

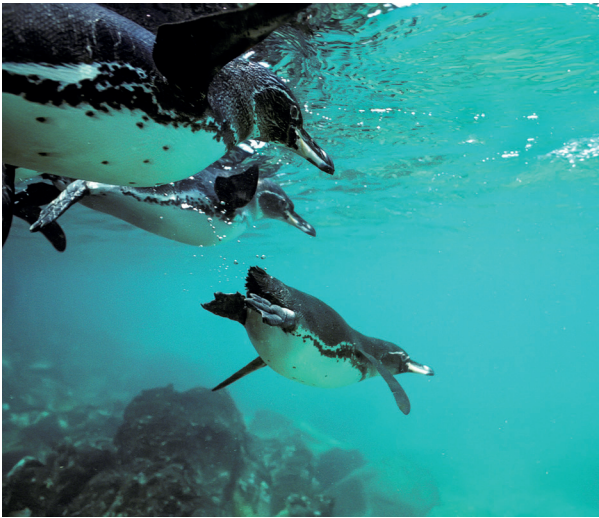
Life at sea

Upon leaving the nesting grounds, penguins come into their own. Like anyone freed of family obligations, and no longer constrained by shuttlecock commuting patterns, many of them range over incredible distances. As they often like to remain sociable at sea, they use especially loud contact calls — harsh and piercing squawks never heard on land — that are clearly audible over wind and waves. Some species, in particular Adélies, Chinstraps and, to a lesser degree, Emperors, will travel with the drifting pack-ice, using floes to rest upon when not fishing. Yet Rockhoppers, Macaronis, Kings and many others head out into the open ocean, where they may range hundreds if not thousands of kilometres offshore. Porpoising like dolphins

when moving quickly, they will not return to land for many months. More than once I have been utterly dumbfounded when sailing through angry seas in the far south, to suddenly catch the unmistakable ‘Kraaark’ of a penguin call carrying over the roar of the wind, followed by a glimpse of little bullet-shaped bodies erupting briefly between frothy wave-crests.

The fastest swimming speed recorded is for the Gentoo penguin, clocked at 36 kph (22 mph), although it is likely that the sleek King could outpace it. The depth record goes to an Emperor penguin who logged an incredible 564 m (1850 ft) during a nine-minute dive, though most dives average a mere 100–120 m (330–395 ft) and last between three and six minutes. The longest dive duration also went to Emperor penguins, twice clocking a maximum of 22 minutes without a breath.

There is only one other requirement besides nesting that must bring penguins back to dry land: the moult. Unlike many other birds that shed a few feathers at



ABOVE RIGHT A Magellanic penguin paddles up a shallow stream before hopping ashore to reach the busy nesting colony at Seno Otway in Chilean Patagonia.

ABOVE LEFT Galapagos penguins head out in small groups on their daily fishing trip along the rocky lava shores of Bartolomé Island, Galapagos.

LEFT Porpoising enables travelling Gentoos to rise for a breath without losing speed as they head back to their chicks after a day's fishing, Antarctic Peninsula.

a time until their entire plumage has been replaced, penguins undergo what is termed a 'catastrophic moult'. In their world, it's all-or-nothing, since a partially clad penguin has no chance of staying warm while submerged. So they must come ashore, generally just before the onset of winter, having fattened up to the maximum to endure the long fast while their new feathers grow. Cold in their ragged coats, scruffy and hungry, they endure the indignities of being land-bound for about three to four weeks. Once the moult is completed, they will be as good as new for another year of ocean-going life.

It may be that we will never discover enough penguin fossils to be able to reconstruct the exact evolutionary pathways they followed to become what they are today. Yet it is truly amazing to note that the oldest known penguin remains show us that as early as 60 million years ago the blueprint of the modern penguin was already well laid out. As my co-authors and I began discussions with penguin researchers around

the world, asking them to share their discoveries and experiences through their own words in a special section of this book, a kaleidoscope of arresting facts and findings began to emerge. Together, these paint a fascinating picture of how those millions of years served to hew the fine-tuned adjustments that enable penguins to routinely cross the threshold between those two drastically different worlds — land and sea — and hone their proficiency in both. In this they are vastly more advanced than any other air-breathing marine animals such as seals, turtles and even cetaceans. Because of their superlative adaptations, penguins are by far the smallest warm-blooded animals found in the Southern Ocean. They are certainly the most unlikely of all birds. 🐧





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Stripes and Brays: The ‘Jackass’ Foursome

The world’s most northerly penguins, the ‘jackass’ group (so-called because of their donkey-like braying) divides itself between South America and southern Africa, and a few islands in the vicinity of each. In addition to the classic black-and-white coloration that is the signature of nearly all penguins, they share the unusual feature of a double black-and-white band, of varying configuration, running down their face, neck and chest. A patch of bare pink skin between eye and beak, more streamlined but far less well insulated no doubt in response to their temperate habitat, provides the only touch of colour. These are some of the most easily observed of penguins, yet the threats they face create numerous conundrums for conservationists working to ensure their survival. Living closer to humans than most other species often pitches them directly into the path of many of our more pernicious activities.

Galapagos penguin

Giant cacti, sun-baked lava flows, schools of angelfish, and sea turtles grazing in the wave-wash — this is hardly the backdrop that first comes to mind as a natural habitat for penguins. Yet these are amongst my most cherished memories of childhood explorations and early photography projects during my 35 years growing up and living in the Galapagos Archipelago. I remember magic tranquil nights sleeping under the stars, the quietude punctuated with the mournful, almost melancholic calls of penguins returning to their nests. From the jagged lava headland, amorous mates would communicate with long, wistful brays — ‘Aaoooo, heee-haaoooo, heee-haaoooo...’ — vaguely reminiscent of a distant foghorn. For me, this represents the most evocative sound in that otherworldly environment surrounding Fernandina and western Isabela Islands, where frigid seas meet scorched lava spewed by some of the world’s most active volcanoes. In this unique

ABOVE A Galapagos penguin darts along the sandy seabed in pursuit of small schooling fish, Sombrero Chino, Galapagos.

OPPOSITE Part of varied and expressive courtship rituals, a pair of Magellanic penguins stand tall while the male (slightly taller than the female) pats his mate gently with quivering flippers, Patagonia, Argentina.



GALAPAGOS PENGUIN

ABOVE Seeking to rejoin the small flock at the end of a day's fishing, a lone adult emits its mournful contact call, Elizabeth Bay, Isabela Island.

RIGHT With a puffed-up throat during courtship, a male investigates a potential nest site in a tiny lava tube, Cape Douglas, Fernandina Island.

microclimate the land is a virtual desert, whereas beneath the waves penguins share their plankton-rich undersea habitat with an unparalleled diversity of species, from marine iguanas, fur seals and flightless cormorants to giant sunfish and sperm whales.

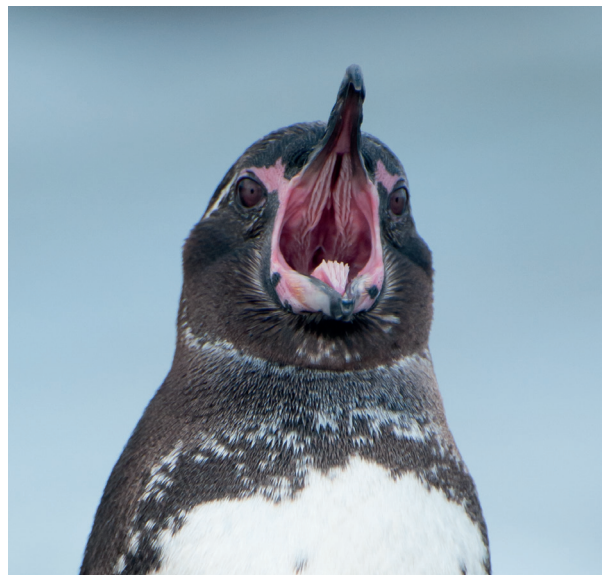
Cape Douglas, Fernandina Island, is perfect Galapagos penguin habitat. During the mid-year change of season, thick, windless fog is a common feature of this coast where sea temperatures are often substantially colder than anywhere else along the equator. Huddled in my sleeping bag on the little beach, enveloped by the damp chill just metres from the waves lapping the coarse sand, I listen as the penguin calls draw near. Soon I sense their little shuffling feet passing right next to where I lie, quite still. In the dawn half-light, pairs are courting. They circle around each other with little hops, murmuring and nodding their heads in jerky movements, or patting each other's back and flanks with gentle taps of their stiff flippers. Soon they disappear into dark crevices and small tunnels under the





lava crust surrounding the beach. They are shy and retiring creatures, most unlike their southern relatives who are notorious for their raucous, sprawling colonies. The diminutive Galapagos penguin is the rarest and second smallest penguin in the world, standing just 35 cm (14 in) tall, and weighing roughly 2 kg (4½ lb). Only some 2000 individuals are in existence today. The Galapagos penguin could be said to represent the end of the line in penguin evolution, its ancestors shunted north all the way to the equator by the cold waters of the South Equatorial Current that flow from the Southern Ocean along western South America, further enriched in coastal areas along the way by the cold, powerful upwellings of the Humboldt Current.

Living smack beneath the equator, with a few individuals straying just north of it, the penguins of Galapagos exist thanks to a remarkable environmental quirk. Here the upwelling Cromwell Current (also known as the Equatorial Countercurrent) is felt most

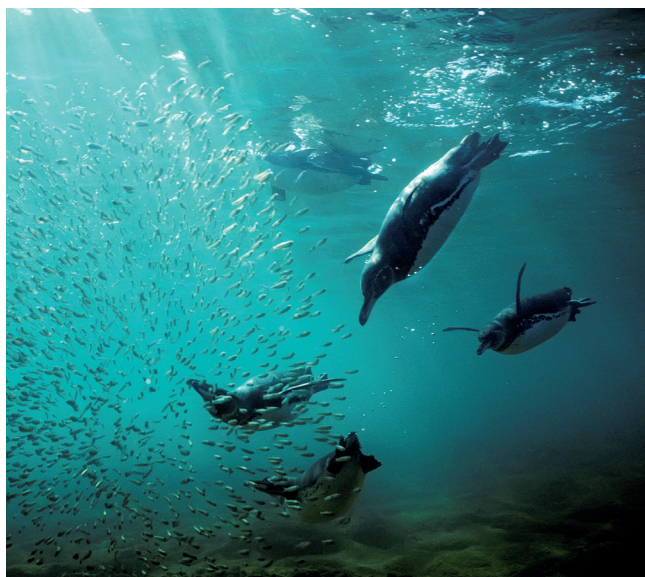


ABOVE A mixed group of adults and immatures rests on the surf-beaten volcanic south coast of Isabela Island.

LEFT A wide yawn reveals the barbed tongue and palate which help grasp slippery prey. The chest and facial bands in this species are only faintly defined.



GALAPAGOS PENGUIN
ABOVE AND RIGHT Fishing is mostly done alone or in small groups, worrying and startling bottom-hugging schools of baitfish, often snatching them from below.



strongly. A thin, mid-water stream flowing west-east across the Pacific, it rises steeply from great depths along the western edge of the submarine Galapagos Platform. This surge carries deep-sea nutrients upward which, upon emerging into sunlight, nurture a veritable explosion of life at the surface — the penguins' lifeline. This allows Galapagos penguins to be coastal feeders — unlike most other penguins — rarely venturing more than 200 m (660 ft) offshore, thus the species' entire range consists of some 350 km (220 miles) of tortuous coastline, a minute habitat pocket only about 150 km long and 50 km wide (95 by 30 miles), plus a couple of other tiny footholds elsewhere in the archipelago. This represents both a minuscule population and an extraordinarily small distribution for an entire seabird species. Living at the edge of possibility for any modern penguin renders it exceedingly vulnerable to any shifts in environmental conditions.



ABOVE Diurnal and sedentary on their feeding grounds, penguins hop ashore to doze in the late afternoon sun. Able to moult any time of year, their colour variation indicates new versus faded plumage, Bartolomé Island.

LEFT A hunting penguin pops up briefly for a breath, Villamil, Isabela Island.



ABOVE AND RIGHT Named after the cold Humboldt Current flowing up the western coast of South America, the species nests on small islands of the Sechura and Atacama deserts of Peru and northern Chile, seen here on Tilgo Island, Chile.

Humboldt penguin

Exactly 40 years after my first childhood encounter with the Galapagos penguin, I find myself once again camped on a cactus-studded desert island, but some 4000 km (2485 miles) to the south. Once more I am listening to plaintive penguin brays through a chilly, damp dawn where the sea is rich but the land is arid, the result of strong oceanic upwellings. But this time the voices ringing from the boulder shore are huskier. I am here to meet the Galapagos penguin's direct ancestor, the Humboldt penguin, whose habitat is sustained by the current of the same name. Splashing ashore through thick kelp fringes in groups of a dozen or more, they are nervous creatures, panicking easily at the sight of any movement. Perhaps for good reason, as their relationship with humans has been a long and difficult one.

In the past, their stronghold was the so-called Guano Islands along the coast of Peru, where numbers probably were in the hundreds of thousands, if not millions. They fed on vast resident shoals of anchoveta, a remarkable

small fish whose position in the food chain places it directly above phytoplankton, skipping the normal intermediary zooplankton tier. This allowed for its superlative abundance, before commercial overfishing upset the balance. On these rainless seabird islands, the penguins dug nesting burrows into centuries' worth of guano (bird droppings) accumulation.

This peaceful setting was changed forever in the 19th century. Seabird guano was discovered as a 'miracle' natural fertiliser, and 20 million tonnes was exported from Peru over a period of 40 years. The islands were literally scraped bare, robbing the penguins of their nesting habitat, and in many cases lowering the islands' elevation by 10 m (33 ft) or more. Later there came a mushrooming fishmeal industry that eventually led to the collapse of anchoveta stocks.

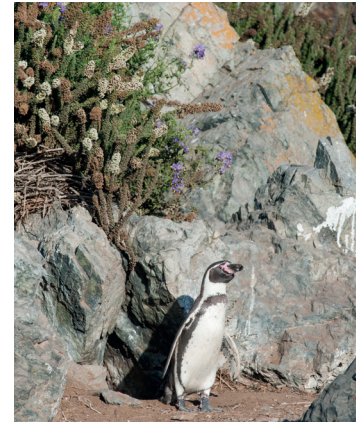
With no reliable food source and few remaining places to nest, their eggs often raided by fishermen and even adults and chicks poached for food or fish bait, the Peruvian population of Humboldt penguins dwindled to





ABOVE AND RIGHT Mining guano for fertiliser in the late 19th and early 20th centuries deprived the Humboldt penguin of the substrate they needed to dig burrows, so they now use rocky caves or hollows where possible, which they scratch out and line with any debris available, Tilgo Island, Chile.





ABOVE Contrasting with lush growth in the sea, vegetation on land is non-existent through the Humboldt penguin's northern range, but provides scant shelter on Chile's coastal islands.

LEFT AND BELOW Deep-sea nutrients, rising to the surface in the upwelling waters of the Humboldt Current, nurture rich marine life, including giant kelp and vast anchoveta schools upon which the penguins rely.

mere remnants. Today they are making an attempted comeback in a few protected sanctuaries, such as Punta San Juan.

On Chile's Isla Tilgo, these reclusive penguins have it easier. Even though the island receives no official protection, as do nearby Choros and Chañaral Islands, the penguins here are doing exceptionally well at the time of my visit during the cool southern winter. Nesting in caves and fissures between boulders, or under spiny desert bushes, most are nurturing plump pairs of chicks, reflecting productive conditions in nearby waters. Commuters toddle quietly up and down well-worn pathways amongst the cacti, under the watchful eyes of hungry Turkey vultures and busy Neotropic cormorants, whose noisy young chatter incessantly in nests balanced amongst the crowns of the tallest cacti. Only a stone's throw from the southern Atacama Desert coast, it seems amazing that no predators have made it across the channel, although at night the island teems with small desert mice.





MAGELLANIC PENGUIN

ABOVE A group lands on a windswept beach in the Falkland islands.

TOP RIGHT Nesting colonies on the mainland shores of South America are usually large and much denser than on islands, perhaps to better repel land predators, Cabo Dos Bahías, Argentine Patagonia.

RIGHT Parent and chick doze peacefully at the entrance of their nesting burrow in Patagonia.

FAR RIGHT A pair mates on the shores of Seno Otway, Southern Chile.

Watching the penguins come and go through waving strands of bull kelp, preening in large groups at their landing sites, or busily feeding hungry chicks, I felt lucky, as I always do when I am amongst penguins, to share in the most intimate moments of their secretive lives.

Magellanic penguin

Lucky is also the feeling that resurged in me time and again during long camping treks along the Falkland Islands coastlines. Feeling the freedom of the cold ocean winds, my partner and I pitched our little tent in sheltered green dells every night, or among clumps of tall tussock grass, where Magellanic penguins gave full voice to nightly social concerts. Many a rainy morning we awoke to their doleful serenades echoing across the vales, as small gaggles stood together to socialise and court.

Sheltering in deep burrows to incubate their eggs and raise their chicks provides this species

with a measure of protection from predators, a luxury not available to surface-nesting penguins in more exposed habitat. Equipped with exceptionally sharp and powerful beaks, together with a feisty temper, Magellanics sitting on their nest inside the burrows can easily take on inquisitive skuas, giant petrels or other potential nest robbers, as many an 'egger' discovered in the days when the Falklands government practised National Egging Day, when schools were let out so children could gather tens of thousands of eggs that the pioneering islanders preserved as food for the winter months.

This effective defence enabled Magellanic penguins to establish themselves at a number of colonies on the continent of South America. From the Patagonian coast of Argentina, notably at Punta Tombo, down to Tierra del Fuego and beyond the Chilean fiords on the Pacific side, they nest in sometimes enormous colonies, the landscape honeycombed by their burrows. The species meets up with the southernmost nesting Humboldt penguins near Valparaiso, where I found it intriguing to







MAGELLANIC PENGUIN

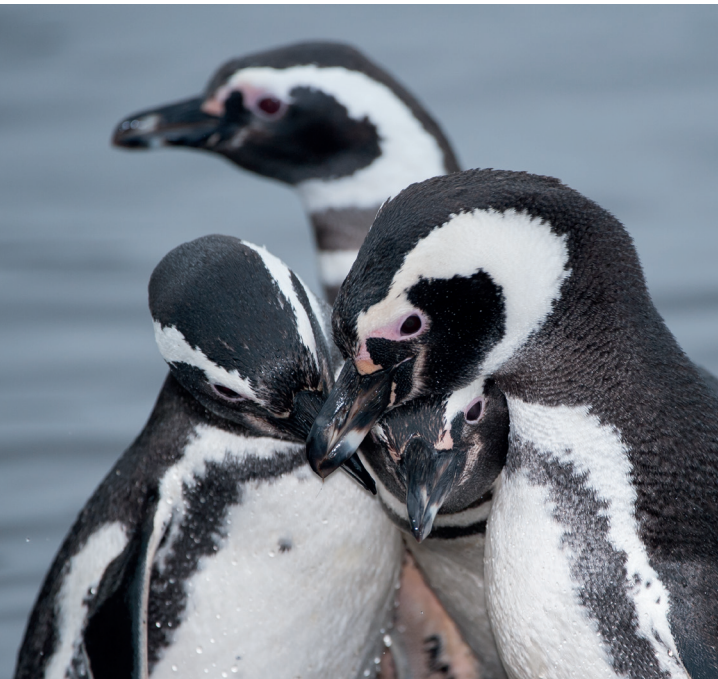
PREVIOUS PAGES As the rising sun breaks through the clouds, a group of nesting adults gathers to socialise in the wave-wash for a while before heading out to feed, Saunders Island, Falklands.

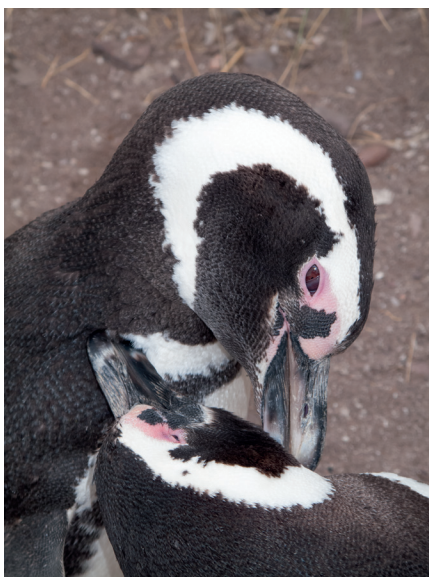
BELOW Shaking their heads and clicking bills together, group courtship sessions are common, Seno Otway, Chile.

BOTTOM Digging a new burrow amongst plant roots in old glacial deposits is hard work, Beagle Channel, Argentina.

RIGHT Both greetings and courtship involve loud, drawn-out braying for which the species is renowned, West Point Island, Falklands.

BOTTOM RIGHT Once the burrow has been cleaned out, grass is carried to line the nest, Seno Otway, Chile.





see both types feeding in mixed flocks, each easily recognisable at sea by their distinctive banded collars. In the Beagle Channel, I also saw both species rubbing shoulders with Gentoo penguins, although very different choices of nesting sites meant they had little to do with each other. But regardless of where they are, the Magellanic's bold black-and-white striped flanks flashing through the surf as groups make their final dash for the beach, rapidly scuttling through the wave-wash beyond the reach of any marauding sea lions, always provides a moment of excitement.

African penguin

The very name 'African penguin' sounds somewhat oxymoronic, implausibly removed from the popular vision of penguins as Antarctic birds. The first time I watched African penguins emerge from turquoise waters and toddle up a picture-perfect, snow-white beach — complete with holiday homes perched on

ABOVE As Magellanic chicks grow older and bolder, they begin to emerge from the nest burrow to join their parents in the afternoon sun, Saunders Island, Falklands.

LEFT Mutual preening is an integral part of courtship and pair bonding, Cabo Dos Bahías, Argentina.



AFRICAN PENGUIN

ABOVE Landing on granite outcrops at Boulders Beach, an adult heads to its nest near Simonstown outside of Cape Town. Unwittingly, this residential development provides shelter from natural predators, allowing a penguin colony to flourish on the African continent.

the granite headland — it looked to me more like some sort of Penguin Club Med than a nesting colony.

In fact, the Boulders Beach nesting colony on the Indian Ocean side of South Africa's Cape of Good Hope is a recently established one that started when two pairs of penguins found a safe haven to raise their chicks between the houses and the sea in 1982. More joined them, taking advantage of the absence of wild African predators around the coastal subdivision. The colony grew to about 3000, and now attracts some 60 000 visitors a year. Until the site reached carrying capacity, this was the only colony of African penguins consistently on the increase, even while others in more natural settings dwindled. To placate residents unimpressed by their noise and smell, a fence now separates penguins from humans.

On the opposite side of the Cape, Robben Island sits just off Cape Town in the Atlantic. In spite of its dark and tumultuous history as a fortified prison camp — where Nelson Mandela spent 27 years of his

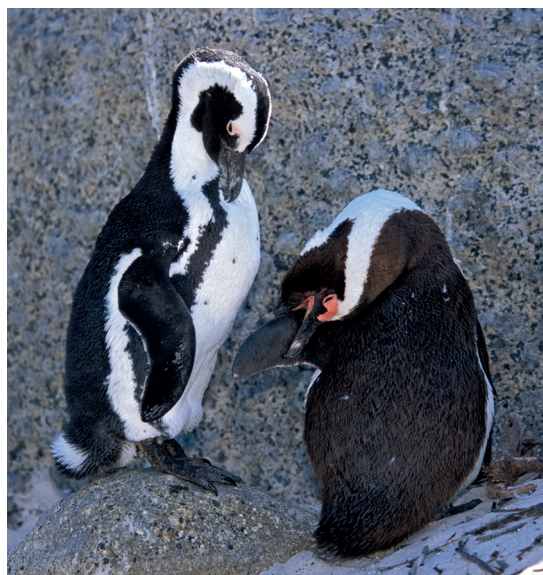
life incarcerated in his fight against apartheid — this is another African penguin stronghold. Here I watch bands of penguins returning home at sunset, just as the pretty lights of Cape Town begin to glow, framed by the impressive outline of Table Mountain against a rosy sky. Minding their own business, the penguins scuttle ashore across slippery boulders, cleverly skirting around the concrete harbour and rows of buildings, ducking along well-worn pathways through dense scrub to gain their nesting sites hidden well inland.

African penguins — variously called Black-footed or Jackass penguins — were the first ever described by modern Europeans, when in 1497 the Portuguese navigator Vasco da Gama sailed around South Africa on his way to India. But that first contact was already ominous: 'These birds, of which we slaughtered as many as we could, cried like jackass...' They are also the penguins most often seen in zoos and aquaria in the northern hemisphere, where climate similarities enable them to breed with relative ease in captivity.



However, all does not bode well for their future. From an estimated original population of around 1.5 million a century ago, today a mere 25 000 breeding pairs remain, and even these numbers are still dropping. In the early days of human settlement the penguins were liberally consumed for food. Then coastal development made further inroads, followed by massive oils spills from ever-larger numbers of modern supertankers plying the notoriously stormy seas around the bottom of Africa.

To make matters worse, since entering the 21st century, the sardine runs upon which these penguins depend have been moving gradually farther south, apparently in response to global warming and fisheries pressures. This causes massive breeding failures when parents are unable to cover the distances needed to keep their chicks well fed. Whether our best-known penguin will make it into the 22nd century is a question that only time will answer. 🐧



ABOVE With speckled breast and dark feet that also earned it the name of Black-footed penguin, this was the very first species described by European seafarers in 1497, noting its call as similar to that of a donkey, or jackass.

LEFT A pair seeks the shade of a boulder to preen, Boulders Beach, South Africa.



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