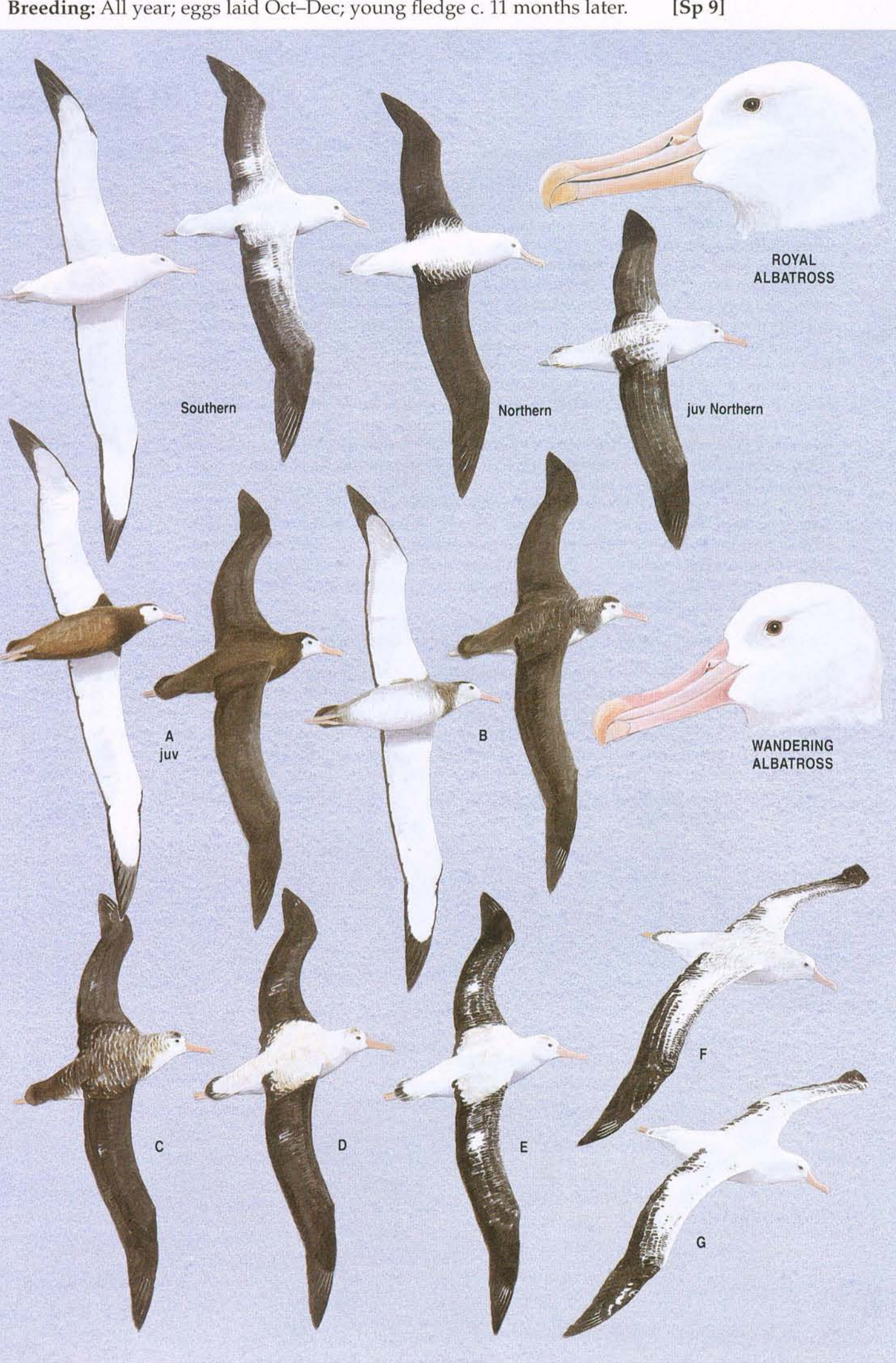
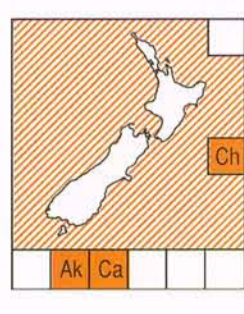


Huge ('albatrosses') or very large ('mollymawks') seabirds with long narrow wings and short tail. Long heavy hooked bill covered with horny plates, nostrils in small tubes on the sides near the base. Most are dark above and mainly white below. Pattern of upperwing, underwing, head and bill are distinctive. In flight, soar gracefully on stiffly held wings, and only rarely flap. Clumsy on ground; legs and webbed feet set well back. Generally oceanic; occasionally seen near land. Many follow ships or gather around fishing boats. Silent at sea except when fighting over food. Loud bleats, croaks, whines and cackles at breeding colonies, and elaborate displays accompanied by bill-clapping and calls. Lay 1 large white egg in shallow bowl or on top of pedestal constructed of vegetation and mud. Long incubation period and extremely long fledging period (7-11 months for full breeding cycle). Sexes alike but males larger. Juveniles generally distinctive for several years.

ROYAL ALBATROSS (Toroa) *Diomedea epomophora* Locally common endemic

115 cm, 9 kg. Two races distinguished by size and amount of black on upperwings. Like the palest adult Wandering Albatrosses but with no distinctive juvenile plumage, wings normally black above or with white on the leading edge of the inner upperwing, and tail usually white; bill massive (170 x 65 mm), light pink with creamy tip and with black cutting edge to upper mandible. Juvenile has white body except for heavy black flecking on the back, flanks, crown and tail; upperwings black (Northern race *sanfordi*) or mainly black with small patches of white at base of leading edge and in centre of inner wing, becoming increasingly white from the leading edge backwards (Southern race *epomophora*). Adult has completely white body; upperwings black (Northern race) or black with white patches extending backwards from leading edge (Southern race); underwings white with black tip and thin black trailing edge. Legs and feet pinkish to bluish white. **Habitat:** Northern race breeds at Taiaroa Head (Dunedin) and Sisters and Forty Fours Is (Chathams); Southern race breeds Campbell and Auckland Is. Ranges widely circumpolar through the southern oceans, and most often seen in NZ coastal waters in winter, except off Taiaroa Head. **Breeding:** All year; eggs laid Oct-Dec; young fledge c. 11 months later. [Sp 9]



ALBATROSSES

14 species, 11 with breeding restricted to the Southern Hemisphere and 3 in the North Pacific.* In the New Zealand region, 10 species have been recorded including 2 endemic species and 5 other breeding species.

Albatrosses and mollymawks (the common name in New Zealand for smaller albatrosses) are a clearly defined group of very large seabirds belonging to the tube-nosed petrel order (Procellariiformes). Although they are among the largest of all flying birds, albatrosses are noted for their perfection of soaring flight behind boats and among the tempestuous seas of the southern oceans. In strong winds, they wheel effortlessly on very long, narrow and stiffly held wings for hours, but in almost calm conditions they have a flapping flight and more usually rest on the surface until the wind picks up. Their webbed feet are used for swimming and as rudders in flight, especially when coming in to land.

Albatrosses have long bills with a strongly hooked tip and small, raised tubular nostrils on either side near the base. The shape and colour of the bill plates can be useful in

Diomedeidae

identifying beach-wrecked specimens, but at sea the head colour and pattern of black on the wings is also important to note.

They nest in loose colonies, mainly on uninhabited and often inaccessible islands of the southern oceans. At their breeding grounds they have an elaborate series of displays accompanied by neighs, groans, baahs, wails, croaks, cackles, and bill-snapping and clapping. All species lay 1 white egg, usually in a shallow depression on top of a pedestal ('chimney pot') made of vegetation and mud. Incubation takes 66-83 days. Nestlings are downy and take many months to reach flying age. With this long breeding cycle, some species can nest only every second year if they have bred successfully.

Albatrosses feed mainly on various squids, fish and offal, on or close to the surface. Some species are readily attracted to boats and follow them for hours, occasionally alighting to pick up scraps cast overboard or food disturbed in the wake. Some are especially attracted to fishing boats, and in recent years several species have suffered high mortality from being drowned in trawl nets or after

taking baited fish-hooks on tuna long-lines. Research is under way to develop new methods to reduce seabird by-catch problems.

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9. ROYAL ALBATROSS *Diomedea epomophora* Plate 3

Other name: Toroa
Size: 115 cm, 9 kg
Geographical variation: Recent taxonomic research suggests that the two subspecies should be reclassified as full species: the large Southern Royal Albatross *epomophora* breeding on the Auckland Islands and Campbell Island, and the smaller Northern Royal Albatross *sanfordi* breeding at the Chathams and at Taiaroa Head, Otago. The two forms have interbred at Taiaroa Head.
Distribution: Breed only in New Zealand; on outlying southern islands and on the mainland at Taiaroa Head, at the southern side of the entrance to Otago Harbour near Dunedin. Ranges through New Zealand coastal waters and the Tasman Sea all year but are most commonly seen in winter, especially in Cook Strait, off East Cape and in Foveaux Strait. Most non-breeders, juveniles and young birds migrate eastwards to seas off South America and the Falkland Islands, returning by the South Indian Ocean and below Australia. Occasional stragglers

have been recorded in the subtropical Pacific near Tonga, off Rarotonga and in the Tuamotu Archipelago of French Polynesia.

Population: c. 15,000 pairs. *epomophora*: Campbell Island 8400 pairs, Enderby, Adams and Auckland Islands 70 pairs; *sanfordi*: Sisters Islands, northern Chathams, c. 2500 pairs, Motuhara (Forty Fours Islands), eastern Chathams, c. 4000 pairs, Taiaroa Head 25 pairs.

Conservation: Protected uncommon endemic. Numbers on the subantarctic islands were much reduced by sealers, whalers, farmers and introduced animals, but since the islands have been protected, and sheep, pigs and cattle have been reduced on Campbell Island and removed from Enderby in the Auckland Islands, numbers have increased.

On the Chathams, the northern subspecies was traditionally harvested by Moriori and then Maori until they were legally protected in 1921. Although some illegal harvest continued, the numbers in the Chathams have apparently remained moderately stable since

the first detailed counts were made in 1972-75. However, a deterioration of nesting habitat related to soil loss in severe storms and a drier climate has led to a decline in breeding success in recent years because many eggs break in the rudimentary nests built in poor rocky habitats.

immediately independent of its parents. If breeding is successful, the adults miss a year before breeding again; but if they fail early in the breeding cycle, most pairs breed in successive years. Pair bonds are life-long, but if a bird loses its mate it can re-pair with another bird. Pairs return to the same nest site year after year, and young return to their natal colony at 3-8 years old, but usually do not start breeding until 6-10 years old. The oldest wild bird recorded in New Zealand is a Northern Royal Albatross, 'Grandma', which reached a banded age of 51.5 years and a probable actual age of over 61 years. **Behaviour:** Gregarious at breeding colonies, and small flocks form around fishing boats, but at sea they are usually solitary. Generally silent at sea but noisy when displaying at their nest.

A small colony of Northern Royal Albatrosses has become established on Taiaroa Head. Birds prospected the colony as early as the 1890s, but it was not until 1938 that they bred successfully. The colony has grown steadily, mainly from returning chicks but also with some continued immigration from the Chathams, so that by 1999 there were about 25 pairs.

Royal Albatrosses seem moderately stable with few reports of birds being killed on tuna long-lines. Series of carefully timed aerial photographs of some colonies, together with banding recoveries, are being used to monitor long-term population trends.

Feeding: Diet of adults is mainly squid, with some fish, crustacea and salps. Food is caught on the surface, and only rarely do birds plunge down a metre or two. They do not seem to regularly take baited long-line hooks.

Breeding: About a month after returning to their colony, Northern Royal Albatrosses lay between 27 October and 6 December, whereas the southern subspecies lays between 24 November and 25 December. They lay 1 white egg (126 x 78 mm, 421 g) in a shallow depression on top of a 10-30 cm tall mound of tussock, thin woody branches, fern and moss. The nest is built on sheltered flat ground, often a long way from a ridge or cliff where adults can catch strong winds or an updraught for takeoff. Incubation is by both sexes in alternating shifts of 2-12 days during the incubation period of 77-81 days.

In the hand: Males are larger than females, with only a slight overlap within subspecies, but female *epomophora* overlap extensively with male *sanfordi*. The southern subspecies *epomophora* is the largest of all albatrosses and is distinctly larger than *sanfordi* in all measurements, e.g. wing 680-705 mm cf. 635-670 mm in males, 650-680 mm cf. 615-635 mm in females; bill 180-190 mm cf. 165-175 mm in males, 165-180 mm cf. 155-165 mm in females.

Chicks are initially covered in white down and are brooded by both parents for the first 5-6 weeks, but are then left unguarded except during feeding visits and occasional longer visits until the chick fledges at c. 8 months old from mid-August to December. It is

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