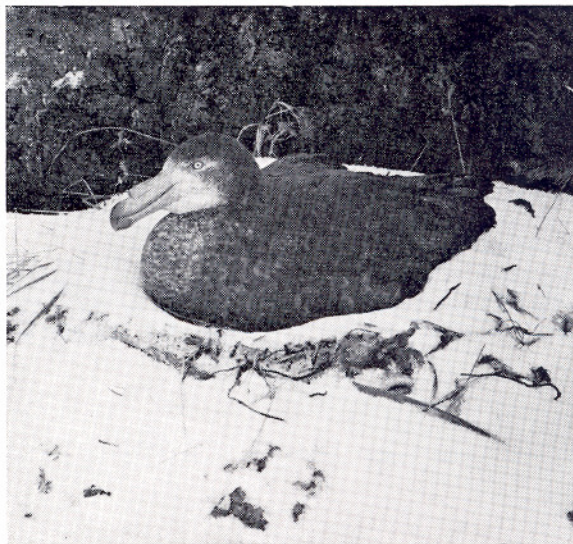


GIANT PETRELS



• *Northern Giant Petrel on nest in snow, Macquarie Island.*

Antarctic Division photograph by G. W. Johnstone

Giant Petrels *Macronectes* spp.

This is a guide to the separation of the Southern Giant Petrel *Macronectes giganteus* and the Northern Giant Petrel *M. halli*, both of which occur around the southern coasts of Australia, mainly in winter. Notes are included on the sexing and ageing of each species.

M. giganteus breeds on islands near the Antarctic convergence and south to the Antarctic continent; *M. halli* breeds on islands near the Antarctic convergence and north to the subtropical convergence. Thus there is a zone of overlap close to the Antarctic convergence where both species breed sympatrically at a few stations, including Macquarie Island*. Most of the data for this guide are derived from birds of the Macquarie Island populations. Generally, plumage differences between two closely related species

whose breeding ranges overlap are greatest in the region of overlap, a phenomenon known as 'character displacement'. For this reason the differences described here may be less evident elsewhere in the breeding ranges of each species.

* (54° 35' S. Lat., 158° 53' E. Long.) where the author, Dr G. W. Johnstone, spent 15 months as a member of the 1970 and 1971 Australian National Antarctic Research Expeditions.

SOUTHERN GIANT PETREL

Macronectes giganteus

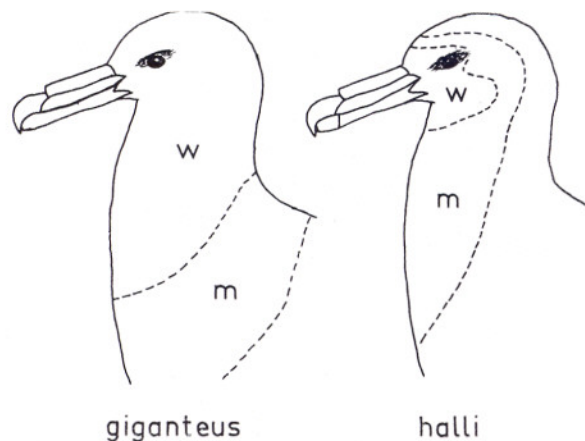
Plumage: About 10% of the population on Macquarie Island are white phased birds, the remainder dark phase; in other populations the proportion of white phased birds may be much less. White phased birds are pure white from hatching, apart from occasional dark feathers which may occur anywhere on the body. Dark phased birds fledge in a uniformly dark grey, almost black plumage. The post-juvenile plumage is thought to be dark greyish-brown, perhaps with some mottling, and with increasing age there is a progressive development of paler areas. The entire head, front of neck, breast and front edge of wings become mottled with pale feathers until they sometimes become almost pure white, giving a 'white-headed' appearance. The darkest breeding birds (presumably the youngest, at least seven years old) have a very pale face

with mottled head and breast. There is no true plumage phase intermediate between the white and dark phases.

Bill colour: Pale pinkish ochre, with the end-plate of both mandibles a lucent green at all ages, most intense in breeding birds.

Iris colour: All first-year birds have dark brown eyes. Of 188 breeding adults at Macquarie Island in 1970, 45% had brown eyes, 17% grey-brown and 38% grey.

Breeding season: Eggs are laid from late September to mid-October. Young fledge from mid-March to late April. The breeding seasons of populations further south are up to one month later.



- Figure 1. The plumage of all birds except white phased *giganteus* becomes paler with age. The illustrations show the approximate extent of white (W) and mottled (M) plumage in the oldest birds.

NORTHERN GIANT PETREL

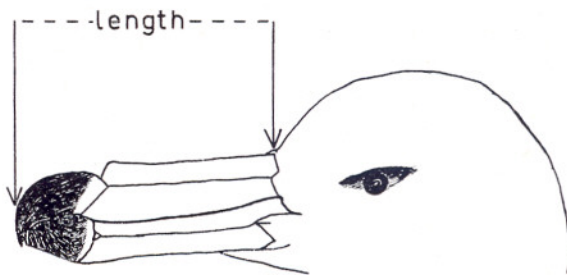
Macronectes halli

Plumage: There is no white phase. All birds are a very dark grey on fledging, becoming brownish with age. The feathers of the face, throat and upper breast (but not crown, back of head or wings) become paler mottled grey in older birds, but white only in the facial area near the base of the bill. Thus 'white-headed' birds never occur.

Bill colour: Pale pinkish ochre, with endplate of both mandibles dull pink, sometimes tending to brown or ochre. In first-year birds the endplate is less pink, but never green.

Iris colour: All first-year birds have dark brown eyes. Of 114 breeding adults at Macquarie Island in 1970, none had brown eyes, 12% had grey-brown and 88% had grey eyes (sometimes so pale as to appear white from a distance).

Breeding season: Eggs are laid from mid-August to early September. Young fledge throughout February. There appears to be little variation in timing at different localities.



- Figure 2. The bill is the same colour in both species except for the shaded area at the tip, which is green in *giganteus* and pinkish in *halli*.

DIAGNOSTIC CHARACTERS

Apart from white phased birds, the only distinguishing feature which can be used for all ages is the colour of the bill-tip, green in *giganteus* and pinkish in *halli*. The distribution of pale feathers around the front of the body, and eye colour, may also help to distinguish older birds. The leading edge of the wings of adult birds is also diagnostic, being pale in *giganteus* and dark in *halli*, and this may often be seen in flight. The difference in breeding seasons suggests that first-year *halli* should occur in Australian coastal waters earlier in the winter than first-year *giganteus*, but information on this point is lacking.

Sexing

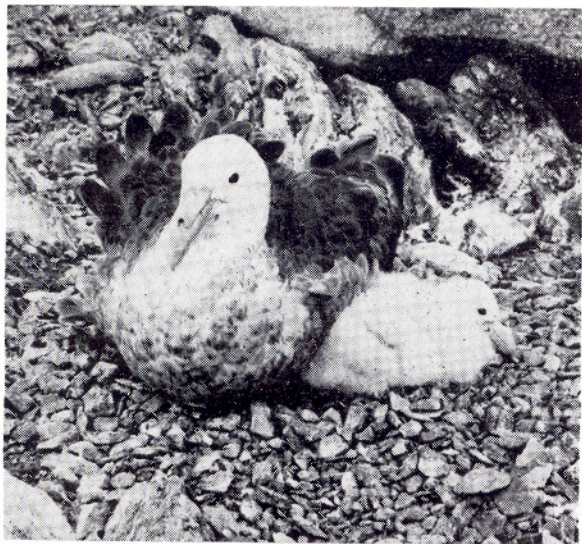
Body dimensions and mass are similar for both species but differ between the sexes, males being larger and heavier than females. A useful measurement is bill length, measured from the tip of the culmen to the first feather at the base of the ridge of the culmen. In the Macquarie Island populations, females of both species have bills in the range 84-94 mm (median 88 mm) and males 95-107 mm (median 102 mm).

There is no sexual difference in plumage or eye colour.

Ageing

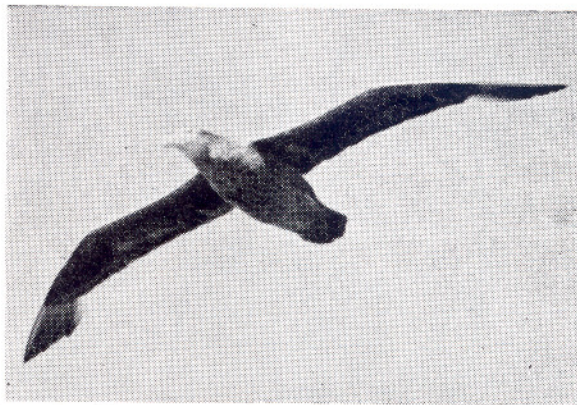
Any giant petrel with entirely dark plumage and brown eyes is almost certainly a first-year bird. The stages of the progressive lightening of the plumage with increasing age are not accurately known.

Drawings by Author



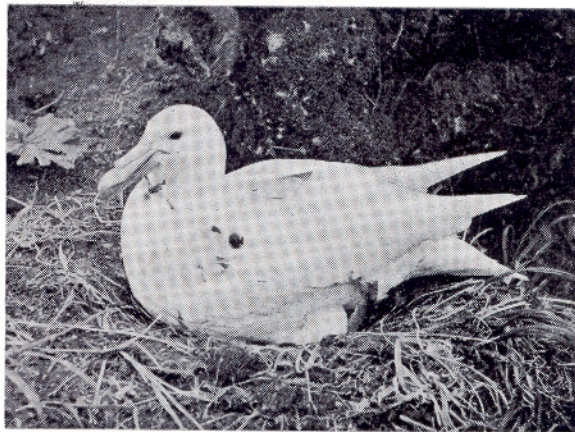
- *Southern Giant Petrel with downy chick on Nelly Island, Antarctica. The nest is made of pebbles and the adult bird is in a threat posture.*

Antarctic Division photograph by M. D. Murray



- *Southern Giant Petrel (dark phase)*

Photo: Capt. K. Ozawa



- *Southern Giant Petrel (white phase)*

Photo by courtesy Div. Wildl. Res., CSIRO.