

BIRD IN THE HAND

by P. J. Fullagar, drawings by L. S. Hall, Canberra, A.C.T.

Identification of Prions—*Pachyptila* spp.

There are six recognised species of prion, but only one, the Fairy Prion, *Pachyptila turtur* is known to breed within Australian continental waters (Slater, 1970). However, a further three species of the group have breeding ranges within the nearby New Zealand region and in fact all forms probably occur regularly in coastal waters of Australia below latitude 30° S. Fleming (1941) has discussed the breeding distribution and relationship of prions.

Measurements

Considerable differences have been shown in comparing the measurements from live or freshly dead prions with those from dried specimens (Falla, 1940; Tickell, 1962; Kinsky and Harper, 1968). These shrinkage differences are of particular importance in the determination of bill width, which may be between 7% and 14% greater in the fresh compared with the dried condition.

All measurements quoted here are from dried specimens, but where relevant and where possible the comparable figures from live birds are given in brackets.

Measurements are taken following the procedures outlined by Disney (1963), with bill width being taken at the base of the beak, and bill depth the vertical height of the bill, properly closed, at a point immediately in front of the nostrils. In those cases where diagnosis depends on tail or wing length, care must be taken with interpretation of measurements. If there are growing feathers, the tail or the wing may be shorter than normal.

Ageing and sexing

There are no plumage or measurement characters for ageing or sexing the live prion. Petrels in breeding condition can be sexed using the technique of cloacal examination (Serventy, 1956). Fledged birds still present on the breeding grounds or those recently departed may retain tell-tale remnants of nestling down adhering to the feathers. After the breeding season the

young birds show fresh plumage when older birds are frequently in moult.

Richdale (1965) gave several bill and body measurements from large samples of live breeding adults of the two prions of extreme body size: the smallest Fairy Prion and the largest Broad-billed Prion, *P. vittata*. He compared some of these measurements with those taken from the respective fully fledged chicks of each species. In both cases there were differences between the old and young birds in the mean values obtained, but a large overlap in the ranges of some measurements. The two most divergent examples are given in the diagram, Figure 1.

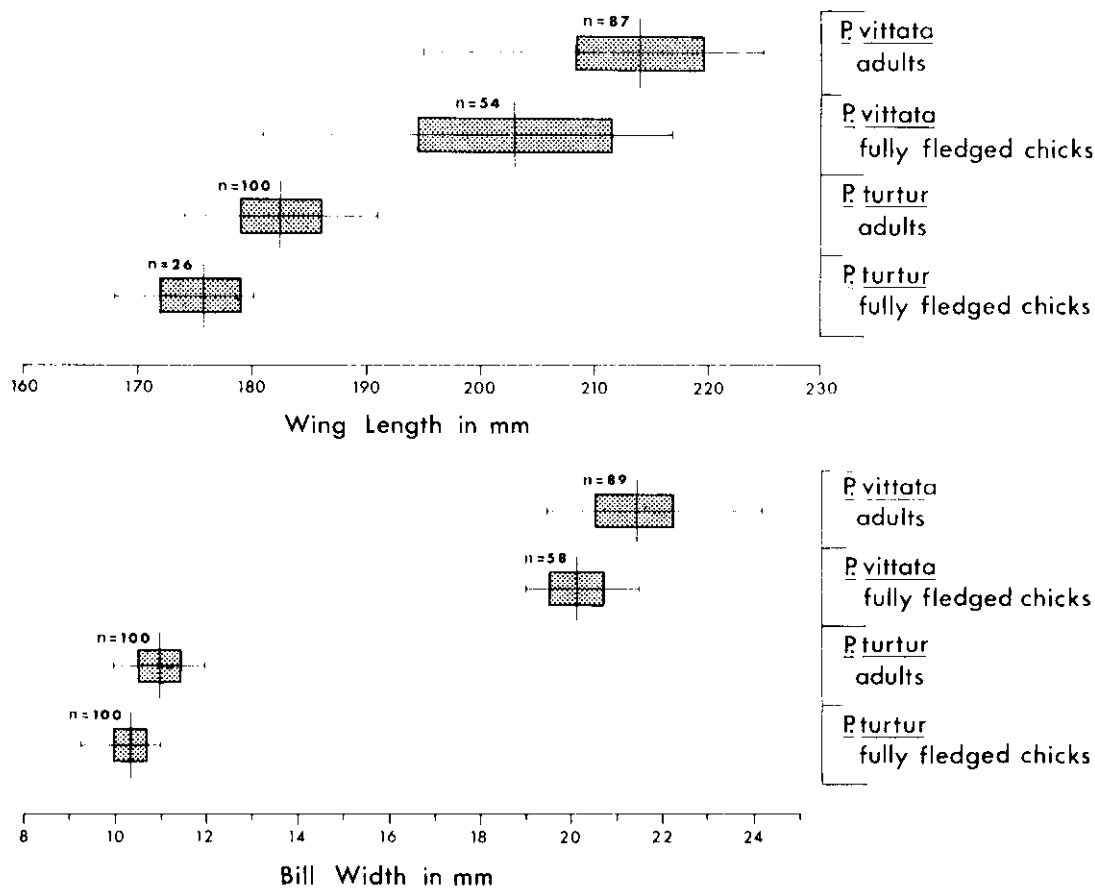
Identification of the Prion Species

The six species of prion can be readily divided into two groups in two ways. There are those with broad dark terminal bands across the tail, rather than narrow ones, and there are those with wide bills rather than narrow or slender bills.

Since identification depends so much on the form of the bill, not only its size, but also an appreciation of its shape, many of the subtle characteristics of each species can only be recognised with experience. It is difficult to establish absolute criteria for identification based on simple observable features amenable to measurement.

The following sequence of examination will most conveniently lead to identification:

1. **Check the tail colour for terminal band width** (see Figure 2).
 - a. If the band is narrow (obviously less



● Figure 1. A diagram illustrating the difference in measurements between fully fledged chicks and adults in two species of prion. The range of variation in wing lengths and bill widths (length of horizontal line), the mean values (vertical line) and standard deviation either side of the mean (boxed region) are shown from samples of live birds measured by Richdale (from Richdale, 1965).

than a third of tail length) then the species is one of the following:

- Broad-billed Prion *P. vittata*
- Medium-billed Prion *P. salvini*
- Dove Prion *P. desolata*
- Thin-billed Prion *P. belcheri*

b. If the band is wide (approximately half the tail length) the species is either

- Fulmar Prion *P. crassirostris* or
- Fairy Prion *P. turtur*

2. Check the bill for size and shape (see Figure 3).

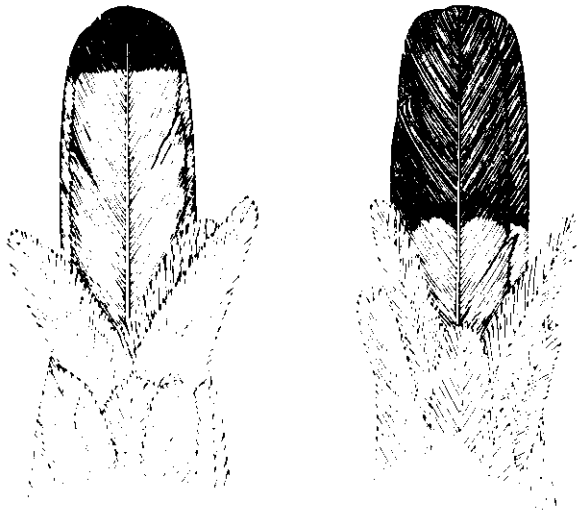
a. If the bill is large, heavy or wide and slightly or very obviously bowed along the edges when viewed from above, usually

showing 'teeth' in the side view when closed, then the species is one of the following:

- Broad-billed Prion
- Medium-billed Prion
- Dove Prion

b. If the bill is narrow, not obviously bowed along the edges when viewed from above or, alternatively, is small and perhaps chunky and robust with only a small space along the upper part of the beak between the nostrils and the curve of the nail or dertrum, then the species is one of the following:

- Thin-billed Prion
- Fulmar Prion
- Fairy Prion



• Figure 2. Examples of wide and narrow tail bands in prions.

The Large-billed Prions

The Broad-billed, Medium-billed and Dove Prions have narrow tail bands.

Check the wing length:

1. **If wing length greater than 200 mm**, almost certainly the bird is a

BROAD-BILLED PRION (see Figure 3).
Confirm if

- a. Bill length greater than 32 mm (33 mm).
- b. Bill width greater than 17 mm (19 mm).
- c. 'Teeth' clearly visible in the closed bill most of its length. Viewed from above the edges of the beak are distinctly bowed.

2. **If wing length less than 200 mm**, either Medium-billed or Dove Prion, unless an unusually short-winged Broad-billed Prion.

MEDIUM-BILLED PRION (see Figure 3).
Confirm if

- a. Bill length 27-32 mm.
- b. Bill width 13.5-17.0 mm.
- c. 'Teeth' clearly visible at base of closed bill. Viewed from above the edges of the beak are noticeably bowed.
- d. Note the shape of the bill profile compared with Broad-billed Prion.

DOVE PRION (see Figure 3).

Confirm if

- a. Bill length 24-30 mm (up to 31 mm)
- b. Bill width 12-16 mm (up to 16.5 mm)
- c. 'Teeth' **not** clearly visible in closed bill except in some specimens close to the base.

Sides of the beak when viewed from above are not very distinctly bowed.

d. Bill length less than 2.3 times the width, but see also notes under Thin-billed Prion.

Slender or Small-billed Prions

1. **Tail band narrow.**

THIN-BILLED PRION (see Figure 3).

Confirm if

- a. Bill length 23-27 mm
- b. Bill width 9-12 mm
- c. Bill length more than 2.3 times the width, to distinguish from Dove Prion. If doubtful, and some are less than this ratio, then the bill margins viewed from above are slightly concave in this species, but in the Dove Prion are definitely not so.

2. **Tail band broad.**

FULMAR PRION or **FAIRY PRION** (see Figure 3).

These species can only be distinguished by the more massive appearance of the Fulmar Prion bill which is chunky and has the margins slightly swollen compared with the Fairy Prion.

Check the depth of the bill:

- a. If greater than 7.5 mm then almost certainly **FULMAR PRION**
- b. If less than 7.5 mm then almost certainly **FAIRY PRION**

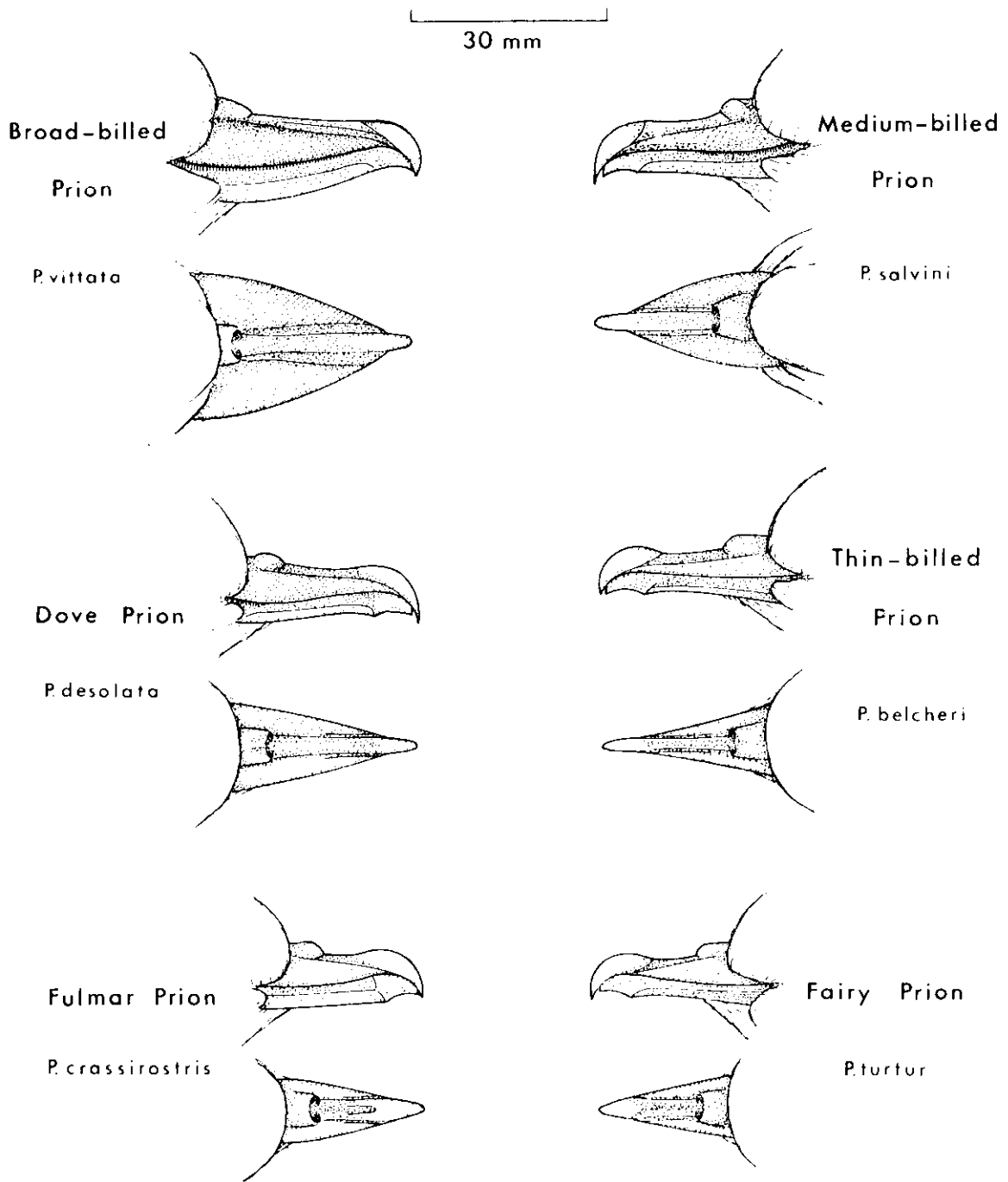
References

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Specimens

The specimens illustrated in Figure 3 were

<i>P. vittata</i>	Aust. Museum	037198
<i>P. salvini</i>	Aust. Museum	033939
<i>P. desolata</i>	C.S.I.R.O.	12507
<i>P. belcheri</i>	C.S.I.R.O.	Data sheet no. ML 478
<i>P. crassirostris</i>	C.S.I.R.O.	Data sheet no. McK 133
<i>P. turtur</i>	C.S.I.R.O.	Data sheet no. 1.037



• Figure 3. Scale drawings of the bills of prions shown in side and dorsal views.