

vulgaris) and Myna (*Acridotheres tristis*) are present in large flocks, especially about the rubbish-tips, and occasional pairs are noted of the Spotted Dove (*Streptopelia sura-tensis*), as well as small flocks of Goldfinches (*Carduelis carduelis*).

Food of "Jacky Winter."—In *The Emu* (vol. xxxv, p. 347) appears a note by J. S. Ramsay, accompanied by photographs illustrating his subject, dealing with the food of Brown Flycatchers (*Microeca fascinans*). A thread of a presumably-sticky substance, extending from the bill of a sitting bird to that of its mate, was noticed after development of a photographic film, although not apparent to the observer when he was photographing the birds. I do not know whether any others have noted such an incident and advised Mr. Ramsay thereof, in response to his request for information, but I have recently observed it. In my case the "thread" extended from the bill of an adult bird to that of a nestling. As in the earlier case it was not noticed until the film was developed. It is probably unlikely that the "thread" will be observed except in similar circumstances for, however close an observer may be the substance must be so attenuated and brief in its appearance as to escape detection by the eye. The accompanying picture, faintly showing the "thread," was taken at Toolern Vale on December 26, 1937.—C. E. BRYANT, Melbourne, Vic., 1/3/38.

A Correction.—In the January *Emu* at page 176 I referred to the Black Honeyeater as nesting in *Olearia Toppii*. My informant as to the identity of the shrub must have been mistaken, for the bushes were actually *Cassinia arcuata*. I have to thank Mr. Marc Cohn for pointing out my error, and for sending me a piece of the actual nest bush, which I have had confirmed at the National Herbarium as the *Cassinia*.—C. E. BRYANT, Melbourne, Vic., 5/3/38.

Pachyptila, or the Prions

By GREGORY M. MATHEWS, Winchester, England

Examination of nearly two hundred skins of Prions, more than seventy being from Western Australia, has brought forward some results which may help in elucidating some of the problems which, on account of the scarcity of material from breeding grounds, enshroud those birds. The birds from the Perth Museum were taken on the coast of Western Australia from Géographe Bay north to level with Perth or a little farther. A small lot was sent to me

by Major H. M. Whittell, and others by Mr. F. Lawson Whitlock.

Here we get occurring together in the non-breeding season five species, viz.:

Pachyptila vittata balaena subsp. nov.—Broad-billed Prion.

Pachyptila gouldi missus—Medium-billed Prion.

Attaprion desolatus alexanderi—Dove Prion.

Heteroprion belcheri serventyi—Thin-billed Prion.

Pseudoprion turtur dertrum subsp. nov.—Fairly Prion.

As I hinted in a former paper (*Emu*, vol. xxxvii, p. 118), *gouldi* is a distinct species from *vittata* and they occur together in some part of their range. *P. gouldi* also occurs together with *desolatus* in part of their range.

As in other species, one finds, on examination, that there are certain almost indescribable characters, which when written down and printed seem trivial, but which in life, or even in specimens, are easily observed. This I find with the species I called *Prion vittatus gouldi* in 1912.

In the form of *vittata* that occurs at Cottesloe we would expect to find the bill narrow as in the form called *Pachyptila v. macgillivrayi* from St. Paul's Island in the Indian Ocean. That is not so and the Western Australian bird differs from *P. v. macgillivrayi* in having the bill much wider. The measurement of the type of the new subspecies *balaena* is wing 207 mm., tail 104, bill 34 by 21.5, tarsus 37, middle toe and claw 42. Type from Cottesloe, Western Australia, 28/6/33. This form is thus nearer to the typical New Zealand bird.

The subspecies of *gouldi* which I called *missus* in 1912 is quite a common form along the Western Australian coast near Perth, where a subspecies of *desolatus* occurs just as frequently. These two forms occur together around the southern Australian and New Zealand coasts. The form of Thin-billed Prion which I called *Heteroprion belcheri serventyi* is another bird which occurs commonly with all the other species of Prion.

The last, *Pseudoprion turtur dertrum*, is a new subspecies and differs from *P. t. eatoni* from Kerguelen Island in its much thinner bill. The measurements of the new form are wing 170 mm., tail 89, bill 21 by 10 wide and 9 deep, tarsus 31, middle toe and claw 36. Type a female from Bunbury, Western Australia, 13/8/36, collected by Major H. M. Whittell. Typical *turtur* occurs as far west as Encounter Bay, South Australia. The Western Australian form of *turtur* is thus nearer the typical subspecies, but has the bill less deep as measured in front of the nostrils.

The shape of the bill in typical *vittata* differs slightly but materially from the same part of *gouldi*. The swollen latericorn viewed from above extends farther on to the

dertrum in *vittata*. *P. gouldi* viewed from the same angle shows that the latericorn is not swollen by the time it reaches the nail, thus giving the bill a different appearance, apart from the difference in measurements. Many birds of the sub-species *Pachyptila gouldi missus* have the greatest width of the bill, 17.5 mm., and that equals the measurements of the same part of *Pachyptila vittata macgillivrayi*. But the shape of the bill of the latter bird will separate it from any form of *gouldi*. If these two forms did not occur together they could be called subspecies, as so many of the measurements overlap. The shape of the bill I treat, therefore, as of specific value. Both these forms have the cutting edge of the upper mandible turned over forming a flange and showing the lamellae quite plainly at the commissure. An adult female of the genus *Pachyptila* was picked up on the beach at Bunbury, Western Australia, on August 9, 1936. It measures: total length 250 mm., culmen 30 by 15.5 wide and 15 deep, wing 186, tail 88, tarsus 36, middle toe and claw 40. The bill was bluish with the culmen black; eyes deep brown; feet and legs bluish, webs cream. Sent to me by Major H. M. Whittell. This bird has the upper mandible turned up at the commissure showing the lamellae, rather like a snarling dog curling his lip and showing his back teeth. It thus resembles *vittata* and *gouldi* and their subspecies and disagrees with *desclata*. The lamellae extend almost to the tip of the cutting edge.

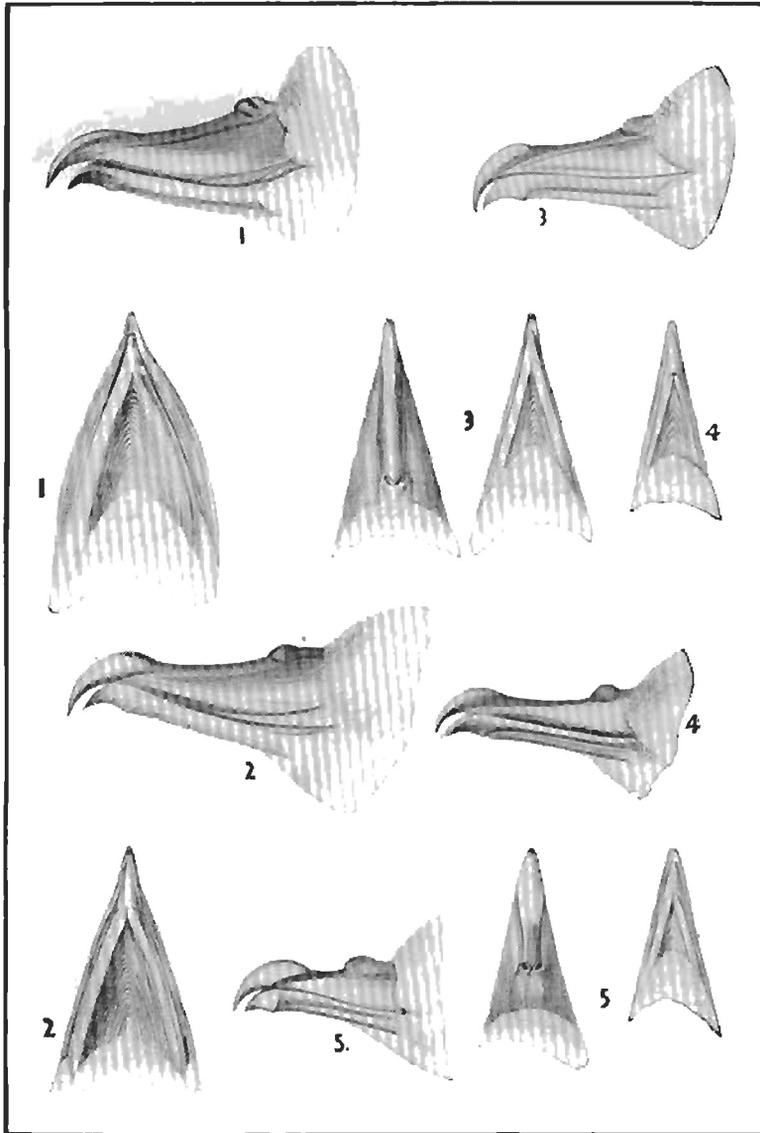
The type of *missus* measures in the bill 36 mm. by 17.5 and thus agrees with others from the type locality. As the above is so different I call it *Pachyptila gouldi whittelli* sub-sp. nov. The three views of the bill will show the subspecific characters.

Examination of the plates will show the difference between the formation of the bills of the different species. Some have thought that *gouldi* was the young of *vittata*; others that *whittelli* was the same as *gouldi*. To consider the difference between a culmen 30 mm. and one of 36, in those Petrels, to be of no account, does not seem right.

All the bills figured are those of adult birds and therefore comparable. In the drawings of the side view of *vittata*, *gouldi* and *whittelli* it will be seen that the feathering on the lower mandible, encroaches much farther than in the other forms. Is this a constant character?

The drawings of the bills of *vittata*, *gouldi missus* and *g. gouldi* (and *g. salvini*) and of the top and side views of *turtur crassirostris* and *belcheri*, are reproduced from my *Birds of Australia*, vol. II, pt. 2.

Comparative features of the bills of the five species are:
vittata.—The widest-billed form, with the cutting edge of the upper mandible turning down suddenly to cover the lamellae.



(1) *Pachyptila vittata buluena.*

(2) *P. gouldi missus.*

(3) *Attapriion desolatus.*

(4) *Heteroprion belcheri.*

(5) *Pseudoprion turtur.*

Drawings by F. W. Frohawk.

gouldi.—The next in width of bill, with this flange not so noticeable, but still there and covering the lamellae which do not extend to the tip of the bill, and are less visible. The dertrum of the lower mandible not so large and thick as in *desolatus*.

desolatus.—The lamellae visible only at the base of the upper mandible and the cutting edge possessing a flange much less noticeable. Cutting edge straight or nearly so, not so turned up at the commissure as the above two.

belcheri.—The narrowest in width of bill. Depth of bill at base about equal to the greatest width. Cutting edge straight.

All the above have the dertrum divided from the nasal tubes by a space greater than the length of the tubes.

turtur.—Bill narrow, as in *belcheri*, but the dertrum divided from the nasal tubes by a space about equal to the length of the tubes. Cutting edge straight. Bill shortest. Depth of bill about equal to its greatest width, or perhaps a little less than it. The dertrum is heavier in proportion than in any other form.

Mandibular rami much arched, showing lamellae.	} <i>vittata</i> -	} - Width of bill at base - much wider than half the length of the culmen.
Bill depressed, wider than deep.		
Width of bill at base about half the length of the cul- men.	} <i>desolatus</i>	} - Nail divided from nostrils by a space greater than the length of the nostrils.
Mandibular rami acute. Lamellae not so noticeable.		
Width of bill at base always less than half the length of the culmen. - - -	} - <i>turtur</i> -	} - Bill as wide as deep. Nail divided from nostrils by a space less than the length of the nostrils.

A¹—Dertrum much less than half the length of the culmen: space between dertrum and the nostrils much greater than the length of the nostrils.

B¹—Bill depressed.

C¹—Bill much wider than deep: mandibular rami very arched: nail not as long as the space between it and the nostrils.

d¹—Latericorn swollen as far as the dertrum: width of bill at the base 17.5 to 22 mm. (average over 20 mm.), always much wider than half the length of the culmen *vittata*

d²—Latericorn not swollen when it reaches the dertrum: width of bill at the base 15.5 to 18 mm. (average 16.9): as wide as, or only a little wider than half the length of the culmen which measures 29 to 35.5 mm., and averages over 32 mm. . . *gouldi*

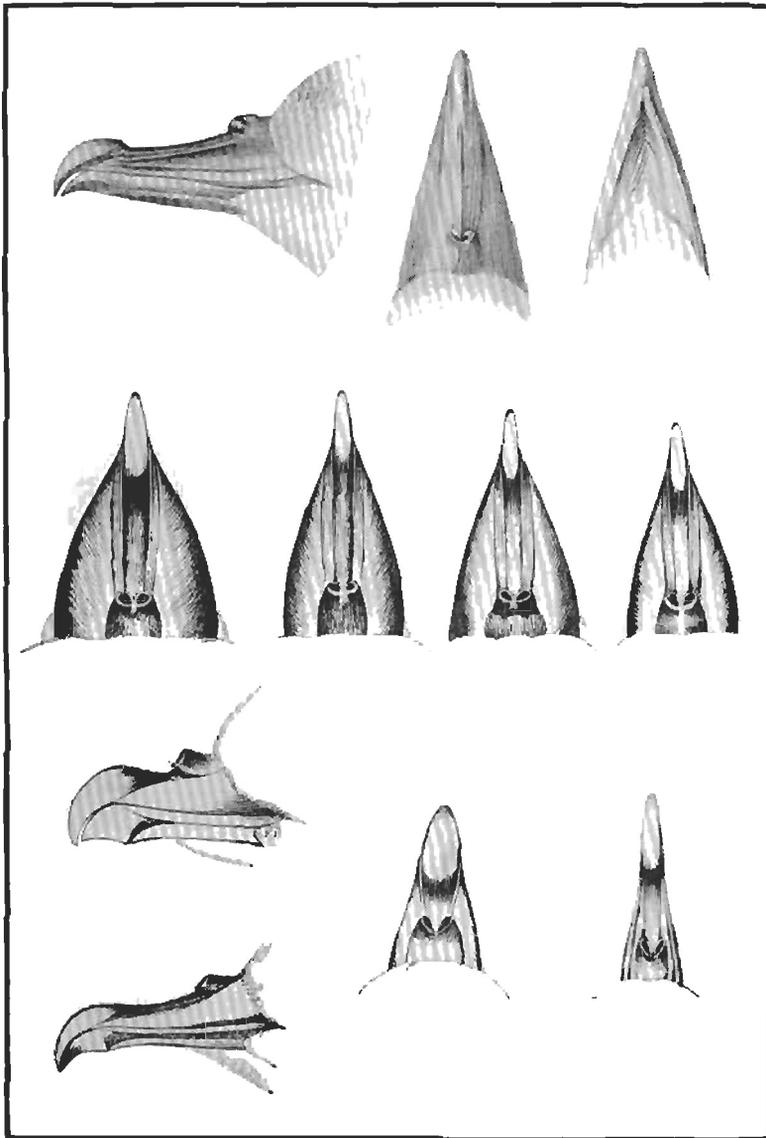
Another form fits in here with a bill 18 to 32 mm. by 14.5 to 17 mm. (average 30.3 by 15.7 wide).

C²—Bill about as deep as wide: mandibular rami not arched, but acute: nail longer than the space between it and the nostrils: width of bill at the base about half the length of the culmen which measures 24 to 29 mm. (average 26.8) *desolatus*

B²—Bill compressed: width of bill at the base always less than half the length of the culmen: width at the base 9 to 11 mm., length of culmen 24 to 26: nail longer than the space between it and the nostrils *belcheri*

A²—Dertrum about half (or less) than the length of the culmen: space between the dertrum and the nostrils less than the length of the nostrils *turtur*

The present number concludes volume XXXVII, and with the issue of the July part the 1938-39 subscriptions will be due. Members are asked to pay promptly.



Top row—*Pachyptila gouldi whittelli*.

Second row—*P. vittata vittata*, *P. gouldi missus*, *P. g. gouldi*,
P. g. salvini.

Bottom—*Pseudoprion turtur crassirostris* and *Heteroprion belcheri*, two views.