

THE VOICE OF THE SOFT-PLUMAGED PETREL (*Pterodroma mollis*)

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During the expedition to Antipodes Island between 28 January and 12 March 1969, recordings were made of the aerial songs of the Soft-plumaged Petrel (*Pterodroma mollis*) discovered there (Warham 1969; Warham & Bell 1979). The recordings were made with a Uher 4000 Report L machine fitted with a Grampian DP4 microphone without a parabolic reflector. Analyses were made on a 6061B Kay Sona-graph.

These petrels were not heard calling from the ground. Their flight calls, however, were quite distinctive, bearing little similarity to those of the other petrels breeding on the island, including the White-headed Petrel (*Pterodroma lessonii*), and it was the strangeness of the calls that first drew our attention to the presence of the Soft-plumaged Petrels.

Their voices consisted of low musical moans lasting for 1-2 sec and often repeated several times. A simple example is shown in Figure 1A. This call consisted of a note at around 1 kHz whose clear harmonics no doubt contributed to its musical quality. In this example, as in many others, a fall in pitch occurred during the moan — after about 1.3 sec in this instance. However, with some calls the pitch was stepped upwards during a moan and very often the harmonics rose and fell irregularly, as in the call of Figure 2C, giving the song a wavering quality.

Most moans concluded with an abrupt upturn in frequency, creating a whip-like ending heard as a sudden *whik*. In the calls of some birds, like that of Figure 1B, the moan began with a very sharply descending staccato note, and in the different call of Figure 1C, where a wide-band filter has been used to increase the time resolution, it can be seen that both the fundamental and the harmonics had a similar reversed-arc pattern in the first phrase of the call. This may have been because at first the bill was opened, then partly closed and finally opened again.

Rather more complex are the calls analysed in Figure 2. In A the moan started without any downward glissade through the frequencies, but had a marked waver and ended with a strong upturn in pitch. A second shorter moan followed after about 0.4 sec, but the two were linked by a shrill relatively high-pitched squeak (X) at

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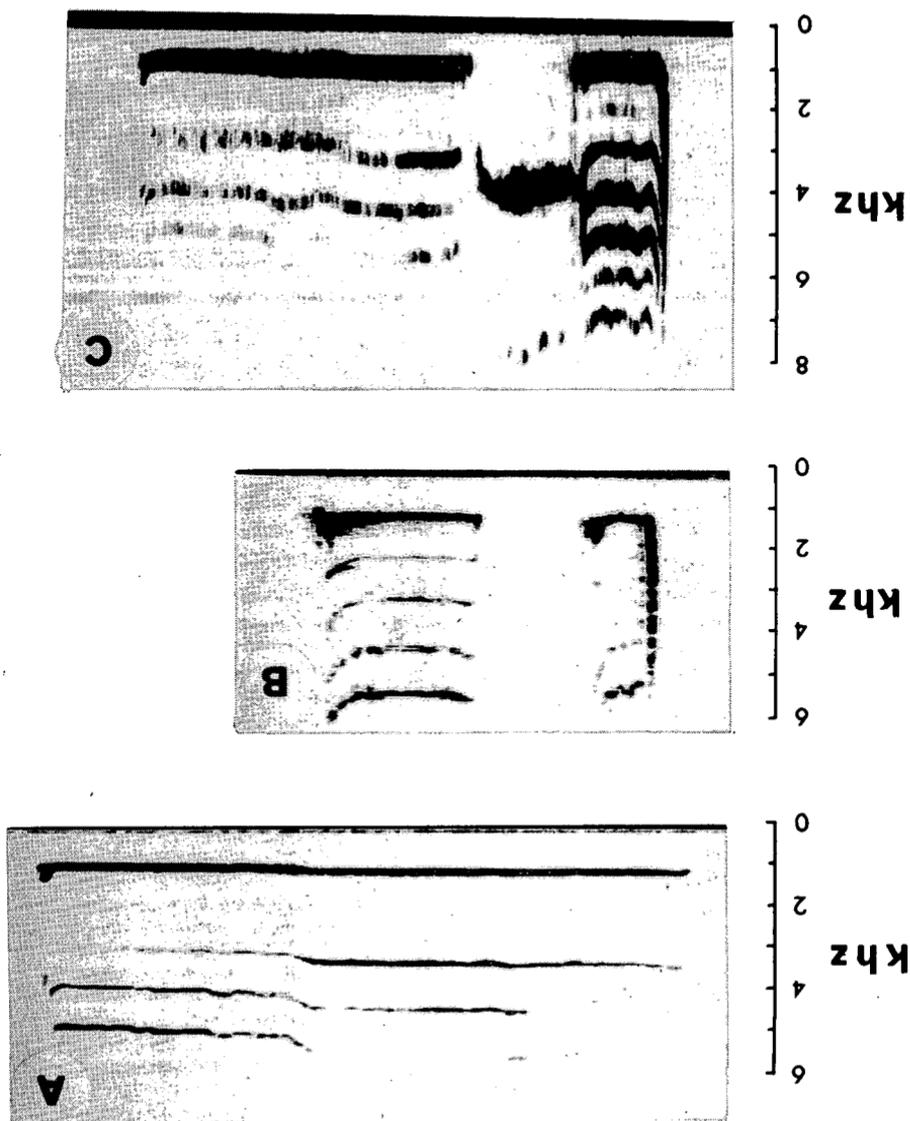


FIGURE 1 — Spectrograms of calls of Soft-plumaged Petrels in flight — 1. (All with narrow band filter except C)

sec

0
1
2

kHz

0
2
4
6
8

kHz

0
2
4
6

kHz

0
2
4
6

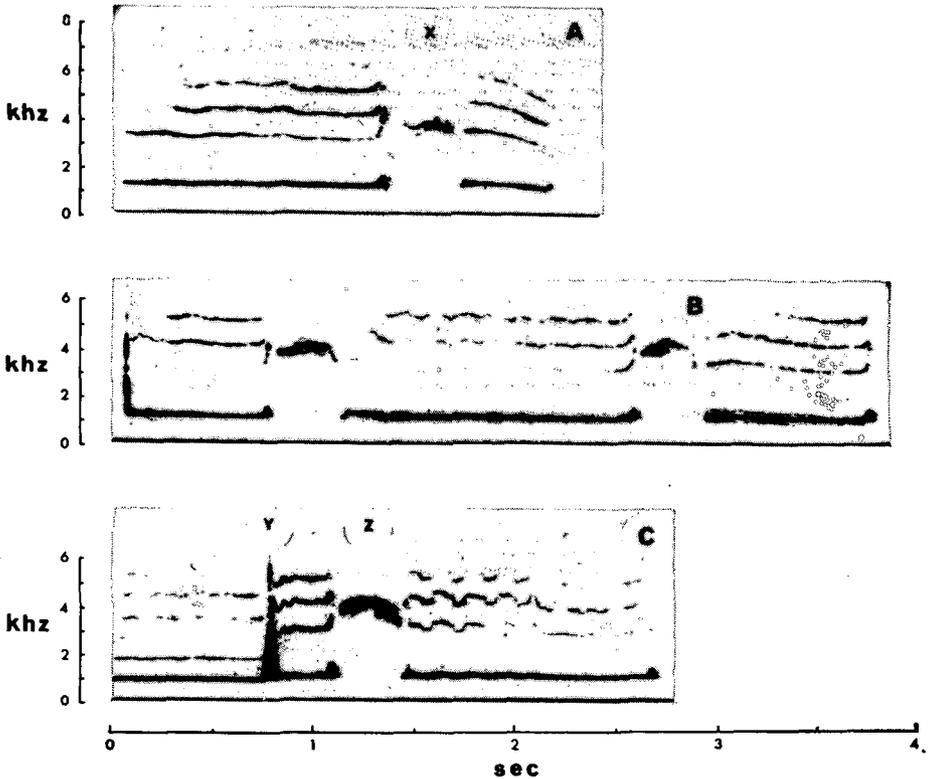


FIGURE 2 — Spectrograms of calls of Soft-plumaged Petrels in flight — II.
(All with narrow band filter)

around 3.8 kHz — see also Figure 1C. Such interspersed notes were often recorded, and although they resembled some of the chatterings of the White-headed Petrels which were also flying when the recordings were made, these interspersed notes seemed to be made by *mollis* and probably by the same bird as made the moan. Yet it cannot be ruled out that, in the darkness, these shrill cries were responses of other *mollis*, perhaps of opposite sex to that of the moaning bird. This seems unlikely as the females and males we collected were all located by their calls without two main types being identified. Unfortunately, I cannot match the calls recorded with the sexed specimens collected.

In Figure 2A the final moan is on a declining frequency whereas that of the bird analysed in Figure 2B ended with an abrupt upturn in frequency. Such differences seemed to form part of a pattern of individual variation. Likewise, the frequencies of the fundamental and harmonics varied slightly from bird to bird, differences which were

quite clear to us when two or more birds were singing simultaneously. Figure 2C provides an example of this. Here, the first bird's moan ended at Y with an abrupt upturn in frequency which overlapped the downwards glissade of the second bird. This bird's call was of slightly higher pitch than that of the first, had an intercalated shrill squeak (Z), and differed also in the greater waver of both fundamental and harmonics.

In all the calls analysed, the fundamental contained most of the energy, as shown by the greater intensity of the lowest trace on the spectrogram. Also, the second harmonic was weak, often not registering at all (e.g. Fig. 2A & B). The three to five harmonics were variously stressed and no doubt such variation forms another aspect of the individual differences noted between calls and which presumably have adaptive value in individual and/or sexual recognition.

These low flutings and their intercalated squeaks were the only kinds of call we associated with *Pterodroma mollis*. They are rather different from those of the Mottled Petrel (*Pterodroma inexpectata*) figured by Warham *et al.* (1977), although the extended *gor-wik* of that species shows some similarities to the Soft-plumaged Petrel's moan. Very similar calls of this species can be heard on M. K. Swales's recording of "Night atmosphere of birds on Gough Island" (BBC disc 25009), an audiospectrograph from which is reproduced in Cramp and Simmons (1977: 131).

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SHORT NOTE

GOLDEN PLOVERS SETTLING ON ROOFS

I was interested to read the note on this topic by Jenkins & Sibson in *Notornis* 26 (2), and the quote from Dr N. W. Cusa. While in Kuching, Sarawak, from October to December 1976, my attention was drawn to Golden Plovers (*Pluvialis dominica fulva*) which regularly roosted at night on the roofs of suburban houses in groups of up to a dozen or so. It seems, therefore, that this habit may be widespread in the Asiatic race of the Lesser Golden Plover. It is interesting to note that nothing similar has been noted for either the American race of this species (*P. d. dominica*) or for the Golden Plover of the Western Palearctic (*P. apricaria*). As this behaviour is probably of recent origin, further observations on the subject may be of considerable interest.

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