

TECHNIQUES FOR OBSERVING BURROWING PETRELS AT THE NEST :  
A COMMENT

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A recent article on techniques for observing Subantarctic burrowing petrels at the nest (Sinclair 1981) calls for some comment since inexperienced use of the techniques described may lead to considerable desertion in some species.

The history of the use of artificial nests for burrowing petrels probably goes back for centuries since these birds have been farmed for food for a long time. For example, the Portuguese made stone 'houses' to encourage the Cory's Shearwaters or 'Pardellas' *Calonectris diomedea* to breed in places from which they could be easily extracted (Baring & Ogilvie Grant 1895). More recently Allan (1962), Wingate (1977), Byrd (1979) and others have used nesting boxes for studying and/or protecting breeding Madeiran Storm Petrels *Oceanodroma castro*, Bermuda Petrels *Pterodroma cahow*, Newell's Shearwaters *Puffinus puffinus newelli* and Wedgetailed Shearwaters *P. pacificus*.

Since 1950 I have used nesting boxes successfully for a variety of species : Manx Shearwater *Puffinus puffinus*, Short-tailed Shearwater *P. tenuirostris*, Sooty Shearwater *P. griseus*, Flesh-footed Shearwater *P. carneipes*, Little Shearwater *P. assimilis*, Mottled Petrel *Pterodroma inexpectata*, Whiteheaded Petrel *P. lessonii* and Whitefaced Stormpetrel *Pelagodroma marina*. Small batteries of boxes designed to slot into rock crevices have proved good for Fairy Prions *Pachyptila turtur*. However, I soon found that not all petrels are as amenable to handling as are Manx Shearwaters and prions. Many readily desert, particularly Sooty, Short-tailed and Fleshfooted Shearwaters. The smaller shearwaters and the gadfly petrels, on the whole, seem less easily alarmed, although, as always with birds, individuals differ in their responses. As a result I have long since stopped extracting adults from eggs or chicks and prefer to prepare observation boxes during the nonbreeding season.

Although Sinclair (1981) found little information on such techniques, Wingate (1977) described his in detail and mine have been described in several publications over the years. Figures 1 and 2 show systems for observation and photography using a totally enclosed 'dark hide' or viewing box over the nesting chamber (Warham 1966, in press). The key points in these techniques, which involve introducing a large object to the site are :

1. Entrance and tunnel are not altered in any way.
2. Alterations to the nest chamber are not done while the adult is present. If not done in contra-nuptial period, then alterations are delayed until the chick is alone during the day.

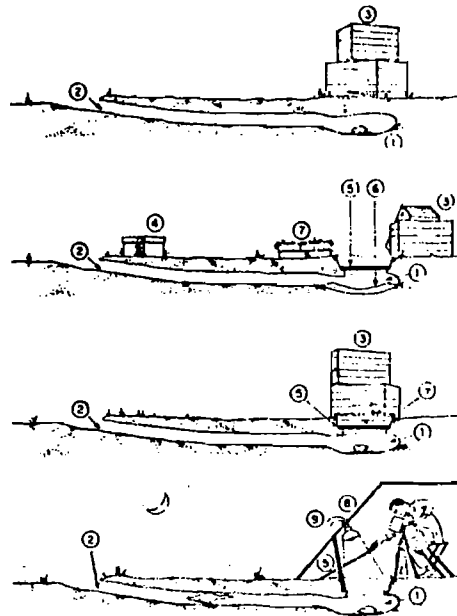


Figure 1

Preparing a 'dark hide' over a nesting chamber

1. Nesting chamber. 2. Entrance. 3. Boxes to simulate hide.
4. Box containing chick removed from chamber. 5. False roof.
6. Cloth to catch digging debris. 7. Turfs replaced. 8. Dark hide.
9. Lamp.

(From Warham 1966 - with permission)

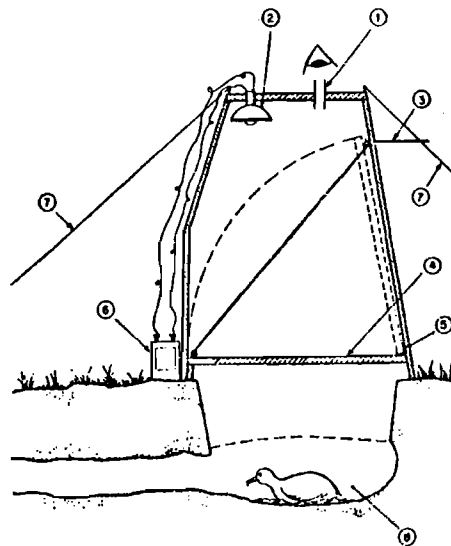


Figure 2

1. Observation tube normally closed with a cork. 2. Lamp.
3. Draw-string to raise false roof. 4. False roof. 5. Hinge.
6. Battery for lamp. 7. Guy ropes. 8. Nesting chamber.

(From Warham 1966 - with permission)

3. Hide or box are introduced gradually over several days.
4. The hide must be light-tight and windproof, the birds will be alarmed if the observer's silhouette is visible against moon or stars. Hardboard or similar material is needed : fabric coverings are useless.
5. The lid must be well insulated, e.g. with a polystyrene pad, so that when the lid is down heat loss is low and the micro-climate of the chamber is little affected.
6. Corners of the hide or box must be well anchored by wire or nylon guys.
7. Light must be dim or red and entirely free from flicker. A motor cycle lead-acid battery is ideal.
8. The observer must be very quiet if birds are not to be alerted.

In any chamber excavation care needs to be taken to see that flooding is not made more likely, as Sinclair (1981) pointed out. I agree with David Duffy (1980) in his cautionary guest editorial (*Cormorant* 9: 57) that the effects of disturbance to seabirds have been underestimated. He referred to effects on supposedly tame species like penguins, and the French have already shown such effects in their physiological work. Furthermore Ollason & Dunnet (1980) have demonstrated that handling and close observation of even the very tame Northern Fulmar *Fulmarus glacialis* affects breeding success. Hence it is not surprising that burrowing petrels trapped at their nests tended to desert (Sinclair 1981).

Clearly, it is impossible to study a bird in the field without having some affect on it, however slight, and the purpose of this note is to urge caution when working with apparently tame birds like burrowing petrels. Any techniques involving alterations to nests, particularly to burrows that are used repeatedly and forming the focus of the pair bond, call for extra caution. If you haven't the time and the right materials to do a next-box excavation, then don't attempt it at all.

The problem of identifying occupied burrows is unsolved where long meandering tunnels in soft earth or peat are involved. Bent or flexible wires, fibre-optics and the like fall down in these circumstances. Tape play-back can help, but when I played calls back to incubating Manx Shearwaters, only the males responded : the incubating females kept mum!

#### ACKNOWLEDGEMENT

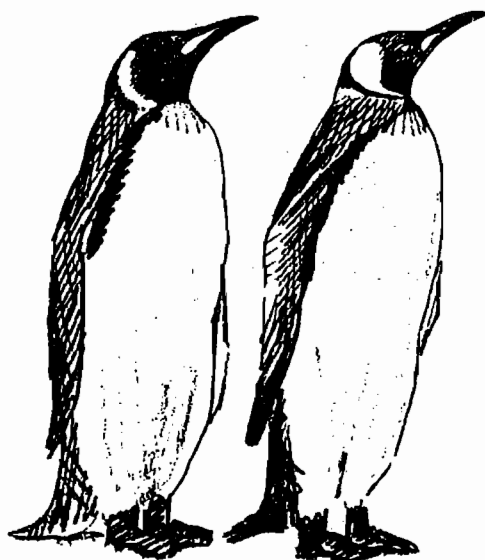
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King Penguins