

From the Rarities Committee's files:

Do we know what British 'soft-plumaged petrels' are?

Jimmy Steele

ABSTRACT Sightings of 'soft-plumaged petrels' *Pterodroma mollis/madeira/feae* in British waters have increased significantly in the last 20 years, and there has been a growing realisation that all the British birds show a suite of characters associated with Fea's Petrel *P. feae*. Fea's Petrel has recently been accepted onto the British List, and there are now three accepted records for Britain, all seen in the Southwest Approaches, in July 2001, August 2001 and September 2004 (see pp. 394–000). The steady accumulation of records has focused attention on the criteria necessary to assess claims of this species. This paper summarises the current situation, reviews the identification of Fea's Petrel in comparison with Zino's *P. madeira* and Soft-plumaged Petrel *P. mollis*, and attempts to establish those characters which are required for records to be accepted, either at the species level or as being of the 'soft-plumaged petrel' complex.



The 'soft-plumaged petrel' complex comprises five taxa that were, until recently, considered conspecific. Most authorities now consider that there are three separate species: Soft-plumaged Petrel *Pterodroma mollis* (with two subspecies, *mollis* and *dubia*), Fea's Petrel *P. feae* (with two subspecies, *feae* and *deserta*) and Zino's Petrel *P. madeira*. These taxa were traditionally known as a single species, 'Soft-plumaged Petrel', and this paper refers to them collectively as the 'soft-plumaged petrel' complex. Although this name is somewhat confusing, there is no obvious alternative that neatly packages the three species together, and which is equally well understood and accepted. In his review of the taxonomy, distribution and identification of the group, Harrop (2004)

established a baseline against which past and future European records of these three species can be judged; in part, this paper is intended to build upon those foundations.

The two Fea's Petrels photographed at sea off Scilly in 2001, and described elsewhere in this issue (pp. 394–000), were subject to extremely detailed analysis. The main aim of this paper is to analyse the descriptions of all the remaining accepted British records, up to and including 2000, to establish whether there is any evidence to suggest that more than one species is occurring. This analysis thus concentrates on the records before the first accepted Fea's Petrel, in July 2001; a period when separation characters of the three species were less well understood and when field observations were, by default,

less focused on key criteria than they would be today. Assigning records to species level is explicitly not the aim of this paper; however, by looking for consistent themes and exceptions in the records as a whole, some interesting patterns emerge.

The occurrence of 'soft-plumaged petrels' in British waters

The first British record of 'soft-plumaged petrel', seen by Tim Inskipp off Dungeness, Kent, on 15th October 1983, was reported without fanfare as a 'gadfly petrel' in the Recent reports section of *BB* (*Brit. Birds* 77: 38; Rogers *et al.* 2004). The second for Britain, off Porthgwarra, Cornwall, on 12th–14th August 1989 (Rogers *et al.* 1992, 1994), was seen by many more people and was greeted with widespread incredulity. Had the Porthgwarra bird (or, possibly, birds) also been seen by only a single observer, it might have created much less of a stir. It was, however, seen by a steadily increasing band of observers on the second day, and became almost twitchable by the third day, when it was assumed that a single individual was following the circuitous feeding movements of other seabirds off Porthgwarra (Rogers *et al.* 1992). There is no doubt that the number of observers who submitted high-quality descriptions helped to smooth its path through BBRC. When that record was first accepted, in the early 1990s, it was tempting to consign it to the 'remarkable seabird' category, along with Aleutian Tern *Onychoprion aleutica*, Ancient Murrelet *Synthliboramphus antiquus* and perhaps Swinhoe's Storm-petrel *Oceanodroma monorhis*. The third record, concerning two birds off Flamborough Head, East Yorkshire, in September 1991 (Rogers *et al.* 1995) appeared, on the face of it, even more remarkable. However, another east-coast record, in Northumberland in September 1993, followed by two birds in the Irish Sea – singles off Bardsey, Gwynedd, in September 1994 and Formby Point, Lancashire, in September 1995, suggested that 'soft-plumaged petrels' were occurring with increasing frequency in British waters (Rogers *et al.* 1996, 1997). Appendix 1 summarises all

accepted records of 'soft-plumaged petrels' recorded in British waters up to and including 2004.

Events in Ireland were closely matching those in Britain, with single birds reported from Old Head of Kinsale, Co. Cork, in August 1989 and August 1992; Cape Clear, Co. Cork, in August 1990 and August 1993; St John's Point, Co. Down, in August 1991; Galley Head, Co. Cork, in September 1991, August 1992 and October 1992; and Mizen Head, Co. Cork, where two were seen on 24th August 1994 (Appendix 2). Interestingly, both Dymond *et al.* (1989) and Enticott (1999) included a *Pterodroma* petrel seen in September 1974 off Cape Clear as a 'soft-plumaged petrel' (and this has subsequently been accepted as Zino's/Fea's Petrel by IRBC), suggesting that their occurrence in British and Irish waters may not be an entirely 'new' phenomenon.

A remarkable six birds appeared in 1996, spread widely throughout British waters from Cornwall and Scilly to southwest Wales, northern Scotland and the North Sea. With a further three records from Ireland, 1996 proved to be a watershed for 'soft-plumaged petrel' in Britain. The rest is history. Accepted records now extend all around the British coast, even reaching beyond 60°N off Shetland, the most northerly record to date. The English east coast has accounted for a significant proportion of records, but the coasts of southwest England remain the most likely region to encounter these birds in Britain. Despite the early sightings, the rapid rise in records through the 1990s is difficult to reconcile with anything other than a genuine change of status in British and Irish waters.

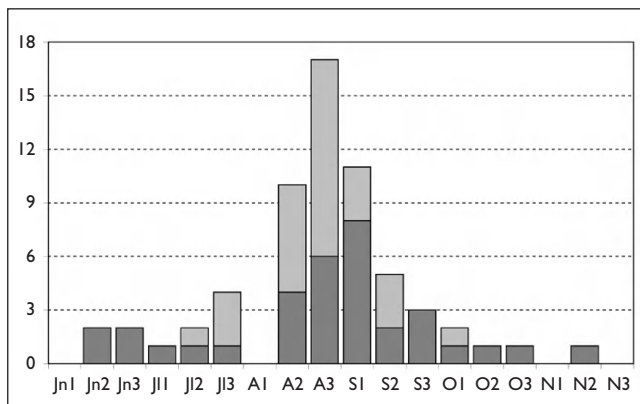


Fig. 1. Accepted records of 'soft-plumaged petrels' *Pterodroma mollis/madeira/feae* recorded from British (dark) and Irish (pale) waters, organised in ten-day periods between June and November.

Interestingly, a similar pattern of increase off the east coast of the USA was apparent over an almost identical period. Here, birds were mostly seen from boats off the coasts of North Carolina and Virginia, from 1988 onwards (Tove 1997). One seen and photographed off Nova Scotia in 1997 was the first record for Canada (Hooker & Baird 1997).

The global status of Zino's, Fea's and Soft-plumaged Petrel

With a breeding population estimated recently to be some 65–80 pairs (cf. 20–30 pairs according to BirdLife International 2000), Zino's Petrel remains one of the world's rarest seabirds, although its conservation status has recently been downgraded from Critical to Endangered as a result of more breeding pairs being discovered on Madeira (<http://www.birdlife.org/datazone/species/index.html?action=SpcHTMLDetails.asp>). This global rarity, together with the fact that the breeding season on Madeira extends from late March through to October, when the young fledge (a period that coincides with most 'soft-plumaged petrel' records in British waters), makes the appearance of Zino's Petrel in the western North Atlantic at this time unlikely, although by no means impossible.

Fea's Petrel is classified as Vulnerable by BirdLife International (2004). The nominate subspecies breeds on the islands of Fogo, Santo Antão, São Nicolau and Santiago in the Cape Verde archipelago, where the population is estimated to be around 500–1,000 pairs (Snow & Perrins 1998). In addition, the subspecies *P. f. deserta* breeds on Bugio in the Deserta Islands of Madeira, where its current population is estimated to be some 170–260 pairs (BirdLife International 2004). On the Cape Verdes, the main laying period is from mid December to late February, while in the Desertas the main laying period is from mid July to mid August (cf. Zino's Petrel, which generally lays between mid May and mid June; Snow & Perrins 1998).

Unlike the two previous species, Soft-plumaged Petrel breeds on oceanic islands in the southern hemisphere, where the population is believed to number some tens of thousands of pairs. The nominate form breeds on Gough and Tristan da Cunha in the South Atlantic, while *P. m. dubia* is a common breeding bird on Marion, Prince Edward, Crozet and Kerguelen Islands in the Indian Ocean, and on the

Antipodes Islands, south of New Zealand. Currently, there is just one accepted record of Soft-plumaged Petrel in the Western Palearctic: at Eilat, Israel, on 25th March 1997. There are no claims of this species from the North Atlantic.

Assessing records of the 'soft-plumaged petrel' complex

To many birders with a particular interest in seabirds, a 'soft-plumaged petrel' is one of the most enigmatic and exciting birds on the British List. It is distinctive, globally rare and, in its own way, spectacular to watch; and its occurrence is difficult to predict. However, for those fortunate enough to see one, there remains a nagging problem. The taxonomic issues and the associated identification problems mean that, unless individuals are seen extremely well and, ideally, photographed, doubt must remain about whether they can be assigned to a given species with total confidence.

In most cases, the identification of Soft-plumaged Petrel can be addressed with a fair degree of confidence in terms of plumage and structural features, although some birds remain problematic. Separation of Fea's and Zino's Petrels is a completely different proposition, particularly without photographic or biometric evidence, and (arguably) positive identification is effectively impossible from land. The key separation features rely entirely on biometrics and structure (see Harrop 2004). Despite some quite large differences, such information is extremely difficult to assess reliably in the field. Increasingly, the problem has been addressed by using the probability of occurrence to categorise records: the possibility of Zino's is eliminated on the basis of its global rarity and all birds are assumed to be Fea's. On the face of it, this doesn't seem unreasonable, based on their status as we know it (see above); however, it is worth remembering that Fea's Petrel is itself a globally rare bird, and that so little is known about either taxon that it is possible that both species occur in British waters.

In terms of record assessment and statistics, BBRC has a problem. The Committee could simply go with the flow and just accept that any non-photographed 'soft-plumaged petrel' is actually Fea's Petrel; or it could take a hard line and consider that anything without a perfect photograph is not identifiable. The question is not as trivial and introspective as it usually is with problems such as this. The change in status

of 'soft-plumaged petrels' in northern waters can, perhaps, be attributed to environmental changes such as sea temperatures or feeding conditions. This change in status may therefore have a political dimension, for example as an indicator of wider environmental change. This is easier to explain if individuals within this complex are described in terms of a named species (thus, like it or not, granting them political status), rather than a scientifically realistic, but less tangible 'either/or'.

Methods

A qualitative approach has been used for this analysis. Every record of 'soft-plumaged petrel' between 1989 and 2000 that has been assessed and accepted by BBRC has been comprehensively reviewed. It is an indication of both the distinctiveness of the birds and the quality of the descriptions that relatively few records have not been accepted during this period. Data on the key separation features for the three species, *mollis*, *feae* and *madeira*, have been extracted in the form of the narrative phrases used by observers in their descriptions. When submissions were received from more than one observer, all key phrases were extracted, but only those that best described the feature con-

cerned are included in the tables (tables 1 & 2). Where clear discrepancies between descriptions exist (for example, if one observer said that the bird was sharp-winged and the other said it was round-winged), then both are reported. Generally, the most precise descriptions are reported but for some very similar descriptions they have either been amalgamated to give a more concise appraisal of the feature, or reported together. In such cases, great care has been taken to ensure that the original meaning has not been changed.

The key areas for which data are reported here are as follows:

1. Separation of Soft-plumaged Petrel from Fea's and Zino's Petrels

Particular attention is paid to the pattern of the underparts, specifically any suggestion of a breast-band, and tail colour. Tail shape is probably less relevant but is also reported. Head pattern is not used owing to lack of sufficient detail in descriptions.

2. Separation of Fea's Petrel and Zino's Petrel

Overall size, bill structure and wing shape are analysed. These are all highly subjective features.

Table 1. Light conditions, underpart and breast colour, tail shape and tail colour extracted from selected descriptions of 'soft-plumaged petrels' *Pterodroma mollis/madeira/feae* seen in British waters between 1989 and 2000, and accepted by BBRC. Scientific names of species mentioned: Manx Shearwater *Puffinus puffinus*.

	Light	Underparts/breast	Tail shape	Tail
12th–14th August 1989, Porthgwarra Cornwall	bright and sunny, behind, overcast on 14th	'white and clear' 'no breast-band' 'dark patch on breast sides'	'fairly long and tapered'	'almost white' 'contrasting pale' 'paler than back'
6th September 1991, Flamborough, East Yorkshire (two observations)	sunny against, though highish, then in favour	'greyish-brown shoulder patch' otherwise 'pure white from throat to undertail-coverts'	'tapering rear end'	'white-based, silvery grey', 'outer third paler than centre'
5th September 1993, Hauxley, Northumberland	fair and sunny, with low light from behind	'clean white'	'longer than Manx'	'slightly paler than upperparts'
5th September 1993, Farne Islands, Northumberland	cloudy, fading light	'clean white'	'tapered and long rear end, long tail'	'contrasting pale grey'
10th September 1994, Bardsey, Gwynedd	'good', sunny (oblique) with some low cloud	'white, no breast-band'	'very attenuated rear end'	'slightly lighter than mantle and contrasting with darker band on upper rump'

Do we know what British 'soft-plumaged petrels' are?

Table 1 cont.	Light	Underparts/breast	Tail shape	Tail
8th September 1995, Formby Point, Lancashire	overcast, but sharp	'no breast-band, possibly smudge on breast sides'	'quite pointed'	'pale grey, almost whitish'
11th June 1996, Gwannap Head, Cornwall	overcast and dull, misty further out, visibility over a mile	'white, no breast-band, partial or otherwise'	'narrow and tapered'	'paler than upperwing and mantle'
25th June 1996, Sea Area 'Fair Isle'	bright morning sunlight from behind	'grey on breast side, no breast-band'	'rather attenuated'	'paler grey than upper wings, as mantle'
18th August 1996, at sea, west of Scilly	bright, but light thin cloud cover, indirect sunshine	'smudge on lateral nape, no breast-band'	'pointed tail'	'very pale, almost white'
13th September 1996, Newbiggin, Northumberland	bright low evening sun from directly behind	'clear white'	'long, tapered rear end'	'paler grey than the (pale grey) mantle, contrasting with dark rump-patch'
20th September 1996, Farne Islands	sharp, but mostly cloudy (7/8), against the light	'no semblance of breast-band'	'tapered to a blunt end'	'contrasting pale grey'
4th October 1996, Strumble Head, Pembrokeshire	variable (seen on three occasions) sunny spells, light from behind	smudge on neck sides suggesting slight breast-band	'tapering with rounded end'	'distinctly pale grey'
26th June 1997, north Norfolk	overcast	'white, like Manx' 'grey neck-sides'	'long and pointed'	'much paler grey than rest of upperparts' some observers felt it was 'almost white'
24th August 1998, Newbiggin	bright but cloudy	clean white, no breast-band'	'tapering rear end'	'appeared white or pale grey'
12th June 1999, Flamborough	overcast, bright	'white, definitely no breast-band' 'greyish neck-sides'	could not be determined	'pale grey, paler than upperparts'
17th August 1999, Prawle Point, Devon	dull, showery, overcast	strikingly white	'appeared pointed'	'looked like a pair of wings' because of pale head and tail
24th & 31st August 1999, at sea, off Scilly	bright, evening light	'all white, with steely grey shoulder-patches' One observer described this as 'incomplete breast-band', another saying 'grey breast-sides ... no breast-band.'	'long, thin tapering rear end'	'very pale, even white' and 'palest part of upperparts ... powder blue'
26th August 1999, Porthgwarra	good, slightly against initially?	'completely white... indistinct darker breast-sides'	'long and clenched'	'clearly paler grey than uppers'
19th November 1999, Farne Islands	dull drizzly	'white from chin to tail tip'	'tapering to sharp point'	'pale grey and contrasting with mantle'
19th November 1999, very poor St Mary's Island, Northumberland		'clean white'	not described	no contrast reported

The presence of other species for direct comparison can often be a critical issue when estimating size and structure, as any experienced seawatcher who has watched juvenile skuas *Stercorarius* on passage can testify. Whether this was the case was not always clear from the description, so a fairly conservative approach has been taken and this is reported only where it is explicit from the description that direct comparison was possible. Light conditions, which may affect the perception of tail colour and, possibly, the presence/absence of a breast-band, are also included within the separation features for Soft-plumaged Petrel. Other characters, including underwing and upperwing colour, and flight pattern, were also reviewed, but are reported separately and are not relevant for specific identification.

Findings

Table 1 describes the prevailing light conditions during observations, and includes comments on underpart and breast colour, along with tail shape and colour. It is clear that no record describes anything other than a clear and unmarked central breast. Some descriptions mention a grey patch on the sides of the neck

and upper breast, a feature characteristic of the two North Atlantic taxa, but many make no mention of this, simply describing clean white underparts. One observer, describing a bird off Scilly in 1999 used the term 'incomplete breast-band' but other descriptions of the same bird indicate very clearly that this refers to no more than the grey neck-sides.

Tail colour is described well by most observers and almost all describe it as paler than the rest of the upperparts, varying from 'paler grey' through to 'almost white'. Light conditions varied considerably and this will have affected the observer's perception of the colours observed. Tail shape is described variably, although in a few instances there is relatively little information on this feature in the description. Where it is described, the terms 'long', 'tapered', 'rounded' and 'pointed' are widely used.

Table 2 presents data on the presence of comparison species, in addition to comments relating to the size and overall structure, bill structure and wing shape. Of these, direct size comparison is probably the most useful and least subjective. Size comparisons almost invariably relate the size of the bird to Manx Shear-

Table 2. Comments on comparison species, size, bill structure and wing shape extracted from selected descriptions of 'soft-plumaged petrels' *Pterodroma mollis/madeira/feae* seen in British waters between 1989 and 2000, and accepted by BBRC. Scientific names of species mentioned: Fulmar *Fulmarus glacialis*, Cory's Shearwater *Calonectris diomedea*, Sooty Shearwater *Puffinus griseus*, Manx Shearwater *P. puffinus* and Kittiwake *Rissa tridactyla*.

	Direct comparison	Size	Bill structure	Wing shape
12th–14th August 1989, Porthgwarra Cornwall	yes: Manx/Sooty	'similar to Manx', 'possibly heavier-bodied'	'stubby/hefty'	'undeniably long' 'long, swept-back, slimmer than Manx' 'sickle/scythe shape'
6th September 1991, Flamborough, East Yorkshire (two observations)	yes: Fulmar	'nearest to Manx'	'large and dark'	'shorter/broader than Manx, sharp tips' or 'long tapered wings with broad bases and sharp tips'
5th September 1993, Hauxley, Northumberland	no	'as Manx, but bulkier and broader-winged'		'pointed tips' 'proportionately shorter than Manx?'
5th September 1993, Farne Islands, Northumberland	no	'similar to Manx'		'longer than Manxie...' 'swept back'
10th September 1994, Bardsey, Gwynedd	yes: Manx	'similar to Manx, but longer in body and wings'		

Do we know what British 'soft-plumaged petrels' are?

Table 2 cont.	Direct comparison	Size	Bill structure	Wing shape
8th September 1995, Formby Point, Lancashire	no	'similar to Manx'		'swept back to tips'
11th June 1996, Gwennap Head, Cornwall	Yes: Manx	'similar to Manx Shearwater'		'narrower and slightly longer than Manx with pointed hand'
25th June 1996, sea area 'Fair Isle'	no	'slightly smaller than Manx'		
18th August 1996, at sea, west of Scilly	no	'slightly larger than Manx'	'chunkier than Manx'	'long in arm and hand, pointed tip'
13th September 1996, Newbiggin, Northumberland	yes: Manx/Sooty	'similar to Manx, slightly smaller than Sooty'		'long, narrow and very pointed'
20th September 1996, Farne Islands	yes: Fulmar	'similar to Manx'		'long, swept back, all wings'
4th October 1996, Strumble Head, Pembrokeshire	yes: Manx	'similar to Manx' 'longer wings'		'longer than Manx and fairly pointed tips'
26th June 1997, north Norfolk	no	'slightly larger than Manx, longer wings'	'deep and hefty'	'longer-winged than Manx, hand 30% longer than arm' 'points slightly rounder than Manx' 'extremely long and pointed hand'
24th August 1998, Newbiggin	yes: Fulmar	'slightly larger than Manx, longer wings, wings as long as Fulmar'	'substantial' (one observer), specifically not determinable by others	'broad-based and tapering... pointed tips'
12th June 1999, Flamborough	no	'slightly larger than Manx'		'long, pointed, broader than Manx'
17th August 1999, Prawle Point, Devon	no	'similar to Manx, if not a little larger'		'long wings, pointed tips' 'extremely pointed at tips'
24th & 31st August 1999, at sea, off Scilly	no	'similar to Manx'	'stubby'/'stuck on'	'long-winged and slender'
26th August 1999, Porthgwarra	yes: Cory's Shearwater	'appeared somewhat larger than Manx, smaller than Cory's'		'thin and pointed wings' 'hand roughly equal in length to arm'
19th November 1999, Farne Islands	yes: Kittiwake	'approximately the same size as Kittiwake... Manx Shearwater size'	'quite broad... tubenose structure'	'long, pointed wings'
19th November 1999, St Mary's Island, Northumberland	no	'considered to be slightly larger than Manx'		'proportionately longer and thinner than Manx, pointed tips' 'arm equal to hand in length'



Hugh Harrop



Hugh Harrop

203 & 204. Fea's Petrel *Pterodroma feae*, Bugio, Madeira, August 2005. A clear view of the dark underwing is a critical point in terms of assigning a bird seen on a seawatch or from a boat to the 'soft-plumaged petrel' complex. The pattern of the underparts, with a clean white breast and, at most, grey sides to the neck, is one of the key features by which, given good views, Soft-plumaged Petrel *P. mollis* can be eliminated.

water *Puffinus puffinus*, the species to which it is superficially most similar in a British context. Overwhelmingly, the descriptions use the phrase 'similar to Manx Shearwater' or a derivative of this. Other descriptions stress the similarity to Manx Shearwater but include more detail, such as 'possibly heavier-bodied' for the 1989 Cornwall bird; 'similar to Manx but longer in body and wings' when describing the 1994 Bardsey bird; while the 1996 Northumberland bird is described as being 'very similar to Manx, slightly smaller than Sooty Shearwater *P. griseus*'. Only one record, of one seen in sea area Fair Isle in June 1996, suggests a smaller bird; but this particular individual was observed from a boat, where observation conditions and size evaluation can be particularly difficult, and where there were no comparison species available.

There are eight descriptions that include a direct comparison with a seabird of similar size and structure, as well as a description of a bird seen alongside a Kittiwake *Rissa tridactyla*. Of these, two were seen with Manx Shearwater only, two with both Manx and Sooty Shearwaters, three with Fulmars *Fulmarus glacialis* and one (seen from a boat, which may make comparisons more difficult to judge) with Cory's Shearwater *Calonectris diomedea*. All stress the similarity to Manx Shearwater, although four of them suggest either a slightly larger or heavier bird, and all eight emphasise the longer wings of the petrel in comparison; in several instances specifically noting the greater wing length compared with Manx. One of the birds seen off Flamborough in 1991 has somewhat contradictory elements regarding the wing shape and structure. One observer commented on the long, pointed wings, while another considered the wings to be shorter and broader than Manx, though still with pointed tips. In this case though, the bird is also described as being bulkier than Manx Shearwater.

Bill structure was rarely described. This is often a difficult feature to judge on a seabird at any range, or against a dark sea; moreover, the importance of bill structure to the identification process has not, until recently, been fully appreciated. The few records which do provide details of bill structure describe it as 'stubby/hefty' (Cornwall, 1989), 'large and dark' (East Yorkshire, 1991) or 'chunkier than Manx' (Cornwall, 1996). One that flew close inshore past several north Norfolk sites in overcast con-

ditions in June 1997 was particularly well documented, and the bill is described as 'deep and hefty'. The lucky observer of a very close and well-described bird which flew past the Farne Islands in November 1999 commented on the size of the bill and even saw the tubenose appearance quite clearly. In most cases, however, even in the best of field conditions, the precise bill structure may never be apparent.

Wing shape has been suggested as a useful identification feature to separate Fea's from Zino's Petrel; this again is a subjective character, and difficult to describe with real accuracy. Nevertheless, it would be interesting if there was any consistency across the records. It is a feature that has clearly impressed observers (table 2), and every description has described wing shape. Some have emphasised the length and wing set – 'longer than Manxie, swept back' – while most have emphasised the wing-tip shape with 'pointed tips' appearing in many descriptions. Overall summaries are frequent; comments such as 'long, narrow and very pointed', used to describe the 1996 Northumberland bird, could summarise a number of descriptions. One description, from Northumberland in 1993, questions whether the wings may have been proportionately shorter than those of Manx Shearwater, but also mentions the pointed tips. Descriptions of the well-watched 1997 north Norfolk bird also differ. One observer describes the wings as more rounded than Manx, while what was undoubtedly the same bird seen a few minutes later was described as having an 'extremely long and pointed hand'. The dubious value of wing structure as a field character is discussed in some depth by Harrop (2004), and this is well illustrated by inconsistencies in the descriptions of the Norfolk record. Descriptions of the same individual suggest that observers' perception of the ratio of 'hand' to 'arm' varies widely, from the hand being 30% longer than the arm, to the two being of equal length. This sheds some light on the reliability of assessments of structure, even by highly experienced observers.

Other aspects of the descriptions

Flight and behaviour

Even in fairly calm conditions, the characteristic *Pterodroma* flight is an extraordinary, almost flap-free, switchback flight, with frequent towering glides. It is quite unlike that of other seabirds likely to occur in British waters and



Hugh Harrop



Hugh Harrop

205 & 206. Fea's Petrel *Pterodroma feae*, Bugio, Madeira, August 2005. From above, the markedly paler tail of Fea's and Zino's Petrels *P. madeira* is a key feature in ruling out Soft-plumaged Petrel *P. mollis*. Eliminating Zino's Petrel is much more problematic, and relies chiefly on structure, notably differences in bill structure and wing structure. Even in high-quality photographs such as these, and plates 203 & 204, it is not easy; but the bill of Fea's is relatively chunky, the tube-nostrils being quite prominent with the suggestion of a short and rather square notch between the nostrils and the back of the large hooked tip on the upper mandible. This pattern is not as clear cut as has been described, however, and is difficult to determine, even on this image.

many descriptions of the British records discuss this in some detail. Although some less experienced observers may see similarities between this flight behaviour and that of the larger shearwaters, or even Fulmar, in British waters only 'soft-plumaged petrel' really throws itself about with the characteristic *Pterodroma* gusto. This is a feature that is perhaps better seen during a land-based seawatch than from the deck of a moving boat. There are subtle variations among the described flight patterns, some birds appearing to tower less, in particular those involved in feeding activity, while some observers considered that the sequence of towering and zig-zagging followed a repetitive cycle. Good descriptions of flight pattern are critical for assigning the birds to the genus but, as far as we know, are not at all useful when assigning individuals to species. Some subtle differences have been described between Soft-plumaged and Fea's Petrels, but it is doubtful whether descriptions from observers with anything other than huge experience of both species, in differing conditions, could be used reliably. The flight of Zino's Petrel has not been described in the literature in any meaningful way.

Head pattern

Harrop (2004) considered that there may be diagnostic differences in the head patterns of the various taxa, and in particular between Soft-plumaged and Zino's/Fea's Petrels. Head pattern was something that all of the British observers found very difficult to describe, and most descriptions contain no useful detail. Being able to use head pattern as an aid to field identification on birds seen from land seems unlikely at this point, unless the views are outstanding.

Underwing

Getting a good view of a predominantly dark underwing is of fundamental importance if a bird is to be placed in the 'soft-plumaged petrel' complex, but is of no (known) value when separating the three species from each other. Not many potential confusion species have a dark underwing, although observers should bear in mind that dark-morph ('blue') Fulmars and pale-morph skuas (which frequently tower without flapping when flying with the wind) could both provide genuine pitfalls for the unwary. The underwing really is extremely dark and was clearly a striking feature for all of the observers of the British records; and this is a

pre-requisite for acceptance. The amount of detail beyond this is rather variable, and the way it is described varies enormously with light conditions. Those seen in brighter light, particularly where there is fairly strong light behind the observer, have shown more detail, ranging from a pale wedge on the leading edge of the underwing to a complex pattern of light and dark, dominated by dark. This is usually in the form of a broad dark bar running up the middle of the underwing, with a paler area along the leading edge, and a limited, slightly paler area on the bases of the primaries and outer secondaries.

Upperparts and upperwing pattern

This feature has shown the greatest variation among the descriptions. As for the underwing, the pattern seen appears to be highly dependent on the light. Approximately half of all submissions emphasise the rather uniform upperwing, the colour tones of which are described as grey or, in some cases, slightly brown-toned. In most of these cases, a paler mantle and darker wings are noted but include little additional detail. The remainder of the descriptions mention a dark 'M' across the wings, this pattern being most obvious on birds seen in strong light from behind the observer or, paradoxically, in very dull light. This wing pattern is certainly a feature of Fea's and Soft-plumaged Petrels, but variation is evident when studying the range of published photographs, and may be related to prevailing light conditions. Quite whether Zino's Petrels show this pattern in the field is unknown but photographs in the hand suggest that they may do.

Discussion

None of the records discussed here can be assigned to species with complete confidence. However, now we know that Fea's Petrel does turn up in British waters, on the basis of the three records accepted so far, the context changes. It is important to reiterate that the purpose of this paper is not to assign each individual to species, but to establish whether there is any strong evidence suggesting that more than one form is likely to be involved.

Is there any evidence that Soft-plumaged Petrel occurs in British waters?

In terms of the three key characters discussed above, the uniformity of the descriptions

reviewed here is quite striking. No bird has ever been consistently reported as having a complete or even a partial breast-band by all observers (see above). Many observers commented on the startling whiteness of the entire underparts, usually in contrast to the dark underwings. Grey sides to the neck were not always reported: perhaps because observers were concentrating on other, more important, characters; perhaps because they were actually difficult to see; or perhaps they were simply not looked for. Views were not always particularly close, but some birds *were* close to shore, and in virtually every case it is perfectly reasonable to expect that if a breast-band was present, even one that was weak, poorly defined or incomplete, it would have been seen reasonably easily.

The validity of tail colour as a feature is also open to some interpretation. The contrast in colour between the body and tail, which is shown by both Fea's and Zino's Petrels, reported by many observers, may not always be obvious (Madge 1990; Harrop 2004), particularly in harsh light. In the case of Soft-plumaged Petrel, however, the contrast between the tail and body appears to be fairly minimal. If a bird shows a contrastingly paler tail, this should be a strongly supportive feature for Fea's or Zino's Petrel. Among the British records discussed here, the uniformity of descriptions of tail colour is quite striking. Only one description did not mention a significantly paler tail. Tail length and shape are much less reliable but still relevant features, and only two descriptions failed to comment on these; in one case probably because of the long

distance involved and in the other perhaps owing to poor light. Otherwise, all birds had long, pale and tapered or rounded tails, which would be expected with the two North Atlantic species.

Although Soft-plumaged Petrel can show a slightly paler tail and incomplete breast-band, the tail contrast is generally poorly marked, and there is usually a significant breast-band. In other words, while the identification criteria need to be interpreted with caution on any individual bird, there is a 'normal' pattern emerging. If any of the well-seen British birds were *not* typical of one of the two northern species, we might expect to see some discrepancies creeping in – for example, the tail contrast not being noted, even when the breast was thought to be clear, or vice versa. What we actually have is a series of descriptions, virtually all of which specifically mention both (i) clean white underparts and (ii) a long, tapered, pale grey tail. In the exceptional cases where these features are not described, there is usually a perfectly good reason why they have not been. On the basis of the records reviewed here, there is so little variation among the descriptions that Soft-plumaged Petrel can be effectively ruled out as a possibility. There is nothing to suggest that Soft-plumaged Petrel has been seen in British waters.

Is there any evidence that Zino's Petrel may occur in British waters?

This is a much more difficult proposition. In order to draw conclusions, it is worth first con-

Table 3. Summary of weights and biometrics of Fea's *Pterodroma feae* and Zino's Petrels *P. madeira*, with those of Manx Shearwater *Puffinus puffinus* for comparison.

Species	Weight (g)		Wing (mm)		Total body length (mm)	Wingspan (mm)
	Published range	Range of reported means	Published range	Range of reported means	Published range	Published range
Fea's Petrel	275–355	311	262–273	263–270	330–360	860–950
Zino's Petrel	175–231	204	247–259	247–254	320–333	800–860
Manx Shearwater	350–535	375–447	–	–	300–380	710–850

Measurements for weight and wing measurements come from original source material or reviews of source material. For Fea's and Zino's Petrels, these include Zino & Zino (1986), Bretagnolle (1995) and Monteiro & Furness (1995). Weight data for Manx Shearwater is taken from Cramp & Simmons (1977). Total body length for Fea's and Zino's Petrels comes from source material based on live birds (Zino & Zino 1986), while total length values for Manx Shearwater and all wingspan values are taken from Mullarney *et al.* (1999) and from Beaman & Madge (1998), and should be taken as estimated rather than precise measurements.

sidering the biometrics of the two forms, and comparing them with the most usual comparison species, Manx Shearwater (table 3).

Biometrics can be difficult to interpret and ironically, it is easier to compare measurements for the two North Atlantic *Pterodroma* species, for which data are scarce, than to compare their biometrics with those of Manx Shearwater, where there exists a range of data from different sites and at different times of year. Furthermore, the different structure of shearwaters means that wing length is not particularly useful when comparing Manx Shearwater with Fea's and Zino's Petrels; 'wingspan' gives a better feel for these differences and this is included in table 3. Not being a standard biometric measurement, wingspan is likely to be approximate, but will still give a reasonable indication of relative sizes and is more useful in the context of field records. The published ranges for weight and wing are tabulated, as well as a range of reported means, as the published data do not allow more detailed statistical analysis. Nevertheless, what is presented should perhaps give enough of a picture to enable us to make some judgements about the British records.

The most striking differences are those in body weight, with Zino's being a lightly built species, and Fea's averaging more than 50% heavier. Comparison of wingspan suggests that Fea's is a particularly long-winged bird. Given the relative values, it is possible that Zino's may appear almost as big as Manx Shearwater and could perhaps give the impression of being fractionally longer-winged, but it seems inconceivable that Zino's would look bigger and substantially longer-winged if direct and accurate comparisons were possible. Conversely, Fea's would be expected to be similar in size to Manx Shearwater but with perceptibly longer wings.

Among those British records where direct comparison (with Manx Shearwater) was possible, all birds were described as similar to Manx in size, or fractionally larger and with perceptibly longer wings. Of the remaining descriptions, all stressed the similarity in size to Manx or felt that birds were slightly larger, but clearly less emphasis should be placed on these. Only two descriptions suggested that the bird may have been smaller or shorter-winged than Manx Shearwater. One commented on the overall bulk being greater than Manx, despite stating

that the wings were 'proportionately shorter' but, in this case, the descriptions of the same bird from other observers emphasised the longer wings. The other observation was from a boat and there were no comparison species present. In the latter case, the difficult circumstances of the observation mean that it would be unwise to place too much emphasis on the size assessment.

There are suggested differences in the wing formula of the two species, with Zino's possibly having a rather blunter wing-tip than Fea's. This is surely an unreliable field character on an individual bird, but it is worth noting that in 15 of the records discussed here the 'pointedness' of the wing-tips is highlighted as a feature. There are some minor discrepancies but, again, the circumstances of the observations and descriptions from other observers can generally account for these.

Unless the bird is seen exceptionally well, the bill can be a particularly difficult feature to see well on a passing bird, and still more difficult to be confident about. Seven descriptions describe the bill sufficiently well to merit comment. All use terms such as 'large', 'stubby' or 'hefty', suggesting a rather robust or thick bill in the cases where it was reported. There is no clear evidence to suggest that smaller-billed birds were seen, as in the other cases the bill was not seen well enough for comment. Of course, an alternative explanation is that they were just not large enough to catch the eye. It takes only a quick glance at the plates in Harrop (2004) to see how unreliable this feature is likely to be in the field without a photograph.

Conclusions

Although it has proved impossible to assign any of these individuals to one particular species with complete confidence, the weight of evidence suggests that the well-observed British records of 'soft-plumaged petrels' refer to Fea's Petrel. There is no evidence at all of birds showing features suggestive of Soft-plumaged Petrel in British waters. Although it is a much more difficult problem, there is also nothing specific to suggest that Zino's Petrel has occurred either. Even where there are minor anomalies relating to one feature in a description, these are either contradicted by another observer's description, or occur where there are other features strongly suggesting Fea's Petrel. Although it is quite possible that either or both

of the other species might occur, there is nothing specific to suggest that any of the British records so far might relate to one of them. This is quite different from saying that any of the earlier records are acceptable as the first Fea's Petrel for Britain; this requires a higher level of proof that is simply not available.

Until such time as there is clearly documented evidence of individual records, or a number of observations of birds displaying features that contradict the established characters, it is probably reasonable for most observers to assume that a 'soft-plumaged petrel' seen around Britain's coast is likely to be Fea's Petrel. This is not only because Zino's Petrels are so rare, but also because the weight of documented evidence, where it exists, is consistent with our current knowledge of Fea's Petrel, the one species which has been proved to occur.

We are left with the dilemma of how to record these sightings statistically, both in the future and for the past. This situation is unique in British terms: only one species has been proved to occur and, of the other two, one inhabits the southern hemisphere and the other is one of the world's rarest birds. There are examples of species pairs where there is a similar problem. For example, consider Grey-cheeked Thrush *Catharus minimus*, which has occurred in Britain on a number of occasions, and Bicknell's Thrush *C. bicknelli*, which remains a potential vagrant and is extremely difficult to identify confidently in the field (and the current taxonomic status of which is still a matter for debate). BBRC has never considered records of Grey-cheeked Thrush as possibly Bicknell's, and since Bicknell's has not yet been shown to occur BBRC will continue to accept all records as apparent Grey-cheeked Thrushes. In an attempt to achieve consistency, the 'soft-plumaged petrels' perhaps need to be addressed in a similar way.

A policy of 'Fea's until proven otherwise' may appear to lack complete scientific rigour, but on the other hand, it is closer to BBRC's statement of purpose (to maintain a statistically valid database of records of rare birds). BBRC will need to come to a decision as to how we should record the previous and subsequent records. Debate would be welcome; but meanwhile, if you do see a 'soft-plumaged petrel', please enjoy it!

Acknowledgments

I would like to thank Andrew Harrop and Colin Bradshaw for comments on earlier drafts. I also thank current members of BBRC for their comments on later drafts. The many observers who submitted records, most of which were very considered and detailed and almost all of which were simply exciting to read, also deserve my thanks for making the review of their efforts enjoyable. Kieran Fahy and Killian Mullarney provided data on accepted records of 'soft-plumaged petrels' in Ireland.

References

- Beaman, M., & Madge, S. 1998. *The Handbook of Bird Identification for Europe and the Western Palearctic*. Christopher Helm, London.
- BirdLife International. 2000. *Threatened Birds of the World*. Lynx Edicions and BirdLife International, Barcelona and Cambridge.
- 2004. *Birds in Europe: population estimates, trends and conservation status*. BirdLife International, Cambridge.
- Bretagnolle, V. 1995. Systematics of the Soft-plumaged Petrel *Pterodroma mollis* (Procellariidae): new insights from the study of vocalizations. *Ibis* 137: 207–218.
- Cramp, S., & Simmons, K. E. L. (eds.) 1977. *The Birds of the Western Palearctic*. Vol. 1. OUP, Oxford.
- Dymond, J. N., Fraser, P. A., & Gantlett, S. J. M. 1989. *Rare Birds in Britain and Ireland*. Poyser, Calton.
- Enticott, J. W. 1999. Britain and Ireland's first 'Soft-plumaged Petrel' – an historical and personal perspective. *Brit. Birds* 92: 504–518.
- Harrop, A. H. J. 2004. The 'soft-plumaged petrel' complex: a review of the literature on taxonomy, identification and distribution. *Brit. Birds* 97: 6–15.
- Hooker, S. K., & Baird, R. W. 1997. A Fea's Petrel off Nova Scotia; the first record for Canada. *Birders Journal* 6: 245–248.
- Madge, S. 1990. Soft-plumaged Petrels at sea. *Birding World* 3: 138–139.
- Monteiro, L. R., & Furness, R. W. 1995. Fea's Petrel *Pterodroma feae* in the Azores. *Bull. Brit. Orn. Club* 115: 9–14.
- Mullarney, K., Svensson, L., Zetterström, D., & Grant, P. J. 1999. *The Collins Bird Guide*. Collins, London.
- Rogers, M. J., and the Rarities Committee. 1992. Report on rare birds in Great Britain in 1991. *Brit. Birds* 85: 507–554.
- & — 1993. Report on rare birds in Great Britain in 1992. *Brit. Birds* 86: 447–540.
- & — 1994. Report on rare birds in Great Britain in 1993. *Brit. Birds* 87: 503–571.
- & — 1995. Report on rare birds in Great Britain in 1994. *Brit. Birds* 88: 493–558.
- & — 1996. Report on rare birds in Great Britain in 1995. *Brit. Birds* 89: 481–531.
- & — 1997. Report on rare birds in Great Britain in 1996. *Brit. Birds* 90: 453–522.
- & — 1998. Report on rare birds in Great Britain in 1997. *Brit. Birds* 91: 455–517.
- & — 1999. Report on rare birds in Great Britain in 1998. *Brit. Birds* 92: 554–609.
- & — 2000. Report on rare birds in Great Britain in 1999. *Brit. Birds* 93: 512–567.
- & — 2001. Report on rare birds in Great Britain in 2000. *Brit. Birds* 94: 452–504.
- & — 2002. Report on rare birds in Great Britain in 2001. *Brit. Birds* 95: 476–528.
- & — 2003. Report on rare birds in Great Britain in 2002. *Brit. Birds* 96: 542–609.
- & — 2004. Report on rare birds in Great Britain in

2003. *Brit. Birds* 97: 558–625.
 — & — 2005. Report on rare birds in Great Britain in
 2004. *Brit. Birds* 98: 628–694.
 Snow, D.W., & Perrins, C. M. 1999. *The Birds of the Western
 Palearctic*. Concise Edn. OUP, Oxford.

Tove, M. H. 1997. Fea's Petrel in North America. Part 1.
Birding 29: 207–214.
 Zino, P.A., & Zino, F. 1986. Contribution to the study of the
 petrels of the genus *Pterodroma* in the archipelago of
 Madeira. *Bol. Mus. Mun. Funchal* 180: 141–165.

Jimmy Steele, 16 Oaklands, Newcastle-upon-Tyne NE2 4BW



Appendix 1. Dates and locations of all 'soft-plumaged petrels' *Pterodroma mollis/madeira/feae* recorded from British waters and accepted by BBRC, including the three records accepted as Fea's Petrel *Pterodroma feae*.

Location	Date	Accepted as	Ref.
Sea area Sole, 16km W of St Mary's (Scilly)	6th September 2004	Fea's Petrel	Rogers <i>et al.</i> 2005
Sea area Sole, 16km W of St Mary's (Scilly)	28th August 2004	Zino's/Fea's Petrel	Rogers <i>et al.</i> 2005
Flamborough (East Yorkshire)	24th October 2003	Zino's/Fea's Petrel	Rogers <i>et al.</i> 2004
Flamborough (East Yorkshire), Whitburn (Co. Durham) and Farne Islands (Northumberland)	23rd September 2002	Zino's/Fea's Petrel	Rogers <i>et al.</i> 2003
North Ronaldsay (Orkney)	21st September 2002	Zino's/Fea's Petrel	Rogers <i>et al.</i> 2003
Sea area Sole, 10 km S of St Mary's (Scilly)	8th September 2002	Zino's/Fea's Petrel	Rogers <i>et al.</i> 2003
Flamborough (East Yorkshire) & Whitburn (Co. Durham)	1st September 2002	Zino's/Fea's Petrel	Rogers <i>et al.</i> 2003
Flamborough & Filey (East Yorkshire)	26th August 2002	Zino's/Fea's Petrel	Rogers <i>et al.</i> 2004
Flamborough (East Yorkshire)	23rd September 2001	Zino's/Fea's Petrel	Rogers <i>et al.</i> 2003
Sea area Sole, 96 km SW of St Mary's (Scilly)	12th August 2001	Fea's Petrel	Rogers <i>et al.</i> 2005
Walney Island (Cumbria)	22nd July 2001	Zino's/Fea's Petrel	Rogers <i>et al.</i> 2003
Hope's Nose & Berry Head (Devon)	17th July 2001	Zino's/Fea's Petrel	Rogers <i>et al.</i> 2003
Sea area Sole, 12 km S of St Mary's (Scilly)	8th July 2001	Fea's Petrel	Rogers <i>et al.</i> 2005
St Mary's Island & Farne Islands (Northumberland)	19th November 1999	Zino's/Fea's Petrel	Rogers <i>et al.</i> 2001
5 km S of St Agnes (Scilly)	31st August 1999	Zino's/Fea's Petrel	Rogers <i>et al.</i> 2001
Porthgarra (Cornwall)	26th August 1999	Zino's/Fea's Petrel	Rogers <i>et al.</i> 2000
1.5 km S of Bishop Rock (Scilly)	24th August 1999	Zino's/Fea's Petrel	Rogers <i>et al.</i> 2002
Prawle Point (Devon)	17th August 1999	Zino's/Fea's Petrel	Rogers <i>et al.</i> 2000
Flamborough (East Yorkshire)	12th June 1999	Zino's/Fea's Petrel	Rogers <i>et al.</i> 2002
Newbiggin-by-the-Sea (Northumberland)	24th August 1998	Zino's/Fea's Petrel	Rogers <i>et al.</i> 1999
Blakeney Point, Cley, Sheringham and Mundesley (Norfolk)	26th June 1997	Zino's/Fea's Petrel	Rogers <i>et al.</i> 1998
Strumble Head (Pembrokeshire)	4th October 1996	Zino's/Fea's Petrel	Rogers <i>et al.</i> 1997
Farne Islands (Northumberland)	20th September 1996	Zino's/Fea's Petrel	Rogers <i>et al.</i> 1997
Newbiggin (Northumberland)	13th September 1996	Zino's/Fea's Petrel	Rogers <i>et al.</i> 1997
3.2 km SW of Bishop Rock (Scilly)	18th August 1996	Zino's/Fea's Petrel	Rogers <i>et al.</i> 1998
Sea area Fair Isle	25th June 1996	Zino's/Fea's Petrel	Rogers <i>et al.</i> 1997
Gwennap Head (Cornwall)	11th June 1996	Zino's/Fea's Petrel	Rogers <i>et al.</i> 1998
Formby Point (Lancashire)	8th September 1995	Zino's/Fea's Petrel	Rogers <i>et al.</i> 1997
Bardsey (Gwynedd)	10th September 1994	Zino's/Fea's Petrel	Rogers <i>et al.</i> 1996
Hauxley & Farne Islands (Northumberland)	5th September 1993	Zino's/Fea's Petrel	Rogers <i>et al.</i> 1997
Flamborough (East Yorkshire) Two birds	6th September 1991	Zino's/Fea's Petrel	Rogers <i>et al.</i> 1995
Porthgarra (Cornwall)	12th–14th August 1989	Zino's/Fea's Petrel	Rogers <i>et al.</i> 1992
Dungeness (Kent)	15th October 1983	Zino's/Fea's Petrel	Rogers <i>et al.</i> 2004

Appendix 2. Dates and locations of all 'soft-plumaged petrels' *Pterodroma mollis/madeira/feae* recorded from Irish waters and accepted by IBRC. IBR = Irish Bird Report.

Location	Date	Accepted as	Ref.
Galley Head (Co. Cork)	19th July 2003	Zino's/Fea's Petrel	<i>Irish Birds</i> (in press)
Cape Clear Island (Co. Cork)	11th September 2002	Zino's/Fea's Petrel	<i>Irish Birds</i> 7: 390
Melmore Head (Co. Donegal)	29th August 2002	Zino's/Fea's Petrel	<i>Irish Birds</i> 7: 390
Old Head of Kinsale (Co. Cork)	23rd September 2000	Zino's/Fea's Petrel	<i>Irish Birds</i> 7: 82
56 km northwest of Arranmore, at sea	18th August 2000	Zino's/Fea's Petrel	<i>Irish Birds</i> 7: 220
Bridges of Ross (Co. Clare)	30th August 1999	Zino's/Fea's Petrel	<i>Irish Birds</i> 6: 546
Greenore Point (Co. Wexford)	23rd August 1999	Zino's/Fea's Petrel	<i>Irish Birds</i> 6: 546
Cape Clear Island (Co. Cork)	18th August 1999	Zino's/Fea's Petrel	<i>Irish Birds</i> 6: 546
Cape Clear Island (Co. Cork)	8th September 1998	Zino's/Fea's Petrel	<i>Irish Birds</i> 6: 380
Helvick Head (Co. Waterford)	6th September 1998	Zino's/Fea's Petrel	<i>Irish Birds</i> 6: 380
Cape Clear Island (Co. Cork)	24th August 1997	Zino's/Fea's Petrel	<i>Irish Birds</i> 6: 288
Bridges of Ross (Co. Clare)	31st July 1997	Zino's/Fea's Petrel	<i>Irish Birds</i> 6: 288
Cape Clear Island (Co. Cork)	22nd August 1996	Zino's/Fea's Petrel	<i>Irish Birds</i> 6: 65
St John's Point (Co. Down)	22nd August 1996	Zino's/Fea's Petrel	<i>Irish Birds</i> 6: 65
Galley Head (Co. Cork)	27th July 1996	Zino's/Fea's Petrel	<i>Irish Birds</i> 6: 380
Brandon Point and Kerry Head (Co. Kerry)	26th August 1995	Zino's/Fea's Petrel	<i>Irish Birds</i> 5: 499 & 6: 65
Bridges of Ross (Co. Clare)	25th August 1995	Zino's/Fea's Petrel	<i>Irish Birds</i> 5: 449
Cape Clear Island (Co. Cork)	27th July 1995	Zino's/Fea's Petrel	<i>Irish Birds</i> 5: 449
Mizen Head (Co. Cork) Two birds	24th August 1994	Zino's/Fea's Petrel	<i>Irish Birds</i> 5: 328
Cape Clear Island (Co. Cork)	11th August 1993	Zino's/Fea's Petrel	<i>Irish Birds</i> 5: 328
Galley Head (Co. Cork)	1st October 1992	Zino's/Fea's Petrel	<i>Irish Birds</i> 6: 380
Galley Head (Co. Cork)	21st August 1992	Zino's/Fea's Petrel	<i>Irish Birds</i> 6: 380
Old Head of Kinsale (Co. Cork)	4th August 1992	Zino's/Fea's Petrel	<i>Irish Birds</i> 6: 380
Galley Head (Co. Cork)	17th September 1991	Zino's/Fea's Petrel	<i>Irish Birds</i> 6: 380
St John's Point (Co. Down)	20th August 1991	Zino's/Fea's Petrel	<i>Irish Birds</i> 4: 574
Cape Clear Island (Co. Cork)	26th August 1990	Zino's/Fea's Petrel	<i>Irish Birds</i> 4: 574
Old Head of Kinsale (Co. Cork)	14th August 1989	Zino's/Fea's Petrel	<i>Irish Birds</i> 4: 575 & 6: 65
Cape Clear Island (Co. Cork)	5th September 1974	Zino's/Fea's Petrel	IBR 23: 6 & <i>Irish Birds</i> 6: 65