FEATHER LICE FROM SOOTY SHEARWATERS
PUFFINUS GRISEUS IN THE FAROE ISLANDS
VEERLUIZEN BIJ GRAUWE PIJLSTORMVÖGELS VAN DE
FAERØER EILANDEN

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Seven species of lice (Insecta: Phthiraptera) were found on 41 dead Sooty Shearwaters (Puffinus griseus) collected from two localities around the Faroe Islands in 1997. Four species (Ancistrona vagelli, Austromenopon paululum, Halipeurus diversus and Trabeculus hexakon) are regarded as regular ectoparasites on Sooty Shearwaters. The other three species (Halipeurus gravis gravis, Naubates harrisoni and Saemundssonia peusi) are treated as natural stragglers from other petrels. Possible explanations for the transferral of the three straggling louse species from their regular hosts to Sooty Shearwaters are discussed.


INTRODUCTION

Sooty Shearwaters Puffinus griseus are common autumn migrants in Faroese waters, arriving around late August and departing in early October (Bloch & Sørensen 1984). From evidence of feather lice from a single bird found dead in Scotland, Zonfrillo (1988) speculated that Sooty Shearwaters in the north Atlantic may have their origins in the Falkland Islands. This was due to the presence of lice typical of the Great Shearwater Puffinus gravis suggesting that the lice had transferred through physical contact between individuals of these two species of shearwaters at a place where both species bred. The Falkland Islands were then the only known locality in the south Atlantic Ocean where Great Shearwaters breed alongside large numbers of Sooty Shearwaters. Since the publication of Zonfrillo’s (1988) paper, Sooty Shearwaters have been found breeding on islands of the Tristan da Cunha group (Ryan et al. 1990). Here, we report further records of Great Shearwater lice from Sooty Shearwaters collected in the Faroe Islands. We now believe that the Tristan da Cunha group seems a more likely place where host-switching of Great Shearwater lice to Sooty Shearwaters has occurred.
MATERIALS & METHODS

On 14 August 1997, 35 dead Sooty Shearwaters were collected following fishing activities on Bill Bailey’s Bank, around 100 km south-west of the Faroe Islands (62°N, 7°) and another six birds were collected similarly from around 15 km north of the Faroes on 15 October 1997. On collection, all birds were immediately wrapped individually for subsequent skinning and delousing. The resulting feather lice were first preserved in alcohol and then slide-mounted for identification following the technique published by Palma (1978). This material is now deposited in both the Natural History Museum, Tórshavn, Faroe Islands, and in the Museum of New Zealand Te Papa Tongarewa, Wellington, New Zealand.

RESULTS

Seven species of lice were collected belonging to six genera, Ancistrona, Austromenopon, Halipeurus, Trabeculus, Naubates and Saemundssonia. Numbers of birds infested by each louse species in the 35 bird sample, are recorded in Table 1. Numbers of lice, subdivided according to sex and status, collected from the sample of six northern birds are shown in Table 2.

DISCUSSION

Four of the seven louse species collected in this study have been recorded previously from Sooty Shearwaters (Pilgrim & Palma 1982; Palma & Barker 1996) and are regarded as regular parasites on this host. Ancistrona vagelli (J.C. Fabricius 1787), here recorded for the first time on a Sooty Shearwater from the north Atlantic Ocean, is also found on many other petrel species (Kéler 1952; Pilgrim & Palma 1982) and on Great Shearwaters (Foster et al. 1996). In the Faroe Islands it is common on Northern Fulmars Fulmarus glacialis (Jensen pers. obs.). Austromenopon paululum (Kellogg & Chapman 1899) is common on Sooty and Great Shearwaters (Pilgrim & Palma 1982; Foster et al. 1996) as well as on many other species of Puffinus (see Price & Clay 1972), including Manx Shearwaters Puffinus p. puffinus (Fowler & Shaw 1990). Halipeurus diversus (Kellogg 1896) is very common on Sooty Shearwaters but also lives on several other species of Puffinus (Edwards 1961; Fowler & Shaw 1990). It is the only species of Halipeurus that parasitises Sooty Shearwaters regularly. Finally, Trabeculus hexakon (Waterston 1914) is widespread on many petrel species of the genera Puffinus, Pterodroma and Procellaria (Pilgrim & Palma 1982), including Great Shearwaters (Foster et al. 1996).

The remaining three louse species are not regular parasites of Sooty Shearwaters. The first, Halipeurus gravis gravis Timmermann 1961, is commonly
found on Great Shearwaters (Foster et al. 1996). Although the species *H. gravis* also lives on the Flesh-footed Shearwater *Puffinus carneipes* and the Pink-footed Shearwater *P. creatopus*, these populations are distinguished as the subspecies *H. gravis priapulus* Timmermann 1961. Thus, the Great Shearwater is the only known regular host for the subspecies *H. g. gravis*. Zonfrillo (1988) recorded one pair of *H. g. gravis* on a Sooty Shearwater, while Fowler & Shaw (1990) found one *H. g. gravis* among 230 deloused Manx Shearwaters. These louse records, and the two specimens we report here from Sooty Shearwaters in the Faroes, must be regarded as natural stragglers, i.e. transferring without human agency, on the Sooty and Manx Shearwaters. A second species, *Naubates harrisoni* Bedford, 1930 lives on a number of *Puffinus* species (Pilgrim & Palma 1982; Fowler & Shaw 1990) including the Great Shearwater (Foster et al. 1996). The two specimens of *N. harrisoni* we found on two Sooty Shearwaters from the Faroes represent the first record of this louse on this host, but they should be regarded as stragglers until further records suggest otherwise. Finally, *Saemundssonia peusi* (Eichler 1949) is a regular parasite of Cory’s Shearwaters *Calonectris diomedea*. However, this louse has also been recorded on Great Shearwaters (Foster et al. 1996; Palma pers. obs.) despite the fact that this shearwater is also a host to *Saemundssonia puellula* Timmermann 1965 (see Palma 1994). The apparent regular presence of two different species of *Saemundssonia* on Great Shearwaters is unusual. A larger sample of Great Shearwaters needs to be systematically deloused to reveal the frequency and abundance of both *S. peusi* and *S. puellula* on this host, as these two louse species are likely to compete for a very similar niche. As many as 45 specimens of *Saemundssonia peusi* were found on 10 (24 %) of the 41 Sooty Shearwaters examined in this study. They represent the first record of this louse from this host. However, these are unusually high numbers of both lice and birds for an association probably due to natural straggling.

The finding of *Naubates harrisoni* and *Halipeurus gravis gravis* on Sooty Shearwaters, both of which are regular parasites of Great Shearwaters, suggests physical contact at a locality where both shearwaters breed or perhaps at

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### Table 1. Lice from 35 Sooty Shearwaters collected at sea on Bill Bailey’s bank, North Atlantic, on 14 August 1997 and the number of birds upon which each species was present.

<table>
<thead>
<tr>
<th>Louse species</th>
<th>An. vagelli</th>
<th>Au. paululum</th>
<th>H. diversus</th>
<th>H. gravis</th>
<th>N. harrisoni</th>
<th>S. peusi</th>
<th>T. hexakon</th>
</tr>
</thead>
<tbody>
<tr>
<td>Birds infested</td>
<td>1</td>
<td>5</td>
<td>34</td>
<td>1</td>
<td>2</td>
<td>8</td>
<td>10</td>
</tr>
</tbody>
</table>
Table 2. Status and sex of lice from six Sooty Shearwaters collected at sea 15 km north of the Faroe Islands on 15 October 1997. M = male, F = female and Ny = nymphs.


<table>
<thead>
<tr>
<th></th>
<th>Au.paululum</th>
<th>H.diversus</th>
<th>H.gravis gravis</th>
<th>S.peusi</th>
<th>T.hexakon.</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>M</td>
<td>F</td>
<td>Ny</td>
<td>M</td>
<td>F</td>
</tr>
<tr>
<td>1</td>
<td>3</td>
<td>-</td>
<td>-</td>
<td>1</td>
<td>1</td>
</tr>
<tr>
<td>2</td>
<td>3</td>
<td>6</td>
<td>36</td>
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<tr>
<td>4</td>
<td>5</td>
<td>1</td>
<td>17</td>
<td>22</td>
<td>23</td>
</tr>
<tr>
<td>5</td>
<td>1</td>
<td>-</td>
<td>1</td>
<td>5</td>
<td>9</td>
</tr>
<tr>
<td>3</td>
<td>1</td>
<td>11</td>
<td>10</td>
<td>1</td>
<td>-</td>
</tr>
<tr>
<td>5</td>
<td>2</td>
<td>7</td>
<td>14</td>
<td>26</td>
<td>16</td>
</tr>
</tbody>
</table>

sea on the feeding grounds. Sooty Shearwaters have recently colonised Tristan da Cunha, where they have been found breeding (Ryan et al. 1990). A Sooty Shearwater shot off the Faroe Islands on 9 March 1977 had been ringed off the coast of southern Africa on 6 May 1968 (Jensen pers. obs.). This evidence strongly suggests that Sooty Shearwaters from around the Faroe Islands either come from Tristan da Cunha or at least visit it on a regular basis. The Falkland Islands hold around 50-100 breeding pairs of Great Shearwaters and many thousands of Sooty Shearwaters (Woods & Woods 1997). The number of Sooty Shearwaters breeding on Tristan da Cunha is also very small in comparison to the millions of Great Shearwaters estimated to breed there (Ryan et al. 1990).

Our records of Saemundssonia peusi on Sooty Shearwaters, a louse regularly associated with Cory’s Shearwaters and now with Great Shearwaters, suggest that Cory’s Shearwaters visit Great Shearwater and Sooty Shearwater colonies in the south Atlantic Ocean. Ryan et al. (1990) reported sightings of Cory’s Shearwaters off Tristan da Cunha, although none has yet been found ashore. An alternative explanation is that Sooty Shearwaters and Great Shearwaters may sometimes come to land on islands in the north Atlantic Ocean where Cory’s Shearwaters breed. Considering that Tristan da Cunha has been prospected and colonised by Sooty Shearwaters, these birds may be doing the same in the northern hemisphere. Salomonsen (1965) suggested that new genotypes of the Northern Fulmar (Fulmarus glacialis) were responsible for the rapid colonisation and expansion of this species’ range in the north Atlantic. A similar set of circumstances may be operating with Sooty Shearwaters in its gradual colonisation of more islands in the Atlantic Ocean.
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SAMENVATTING


REFERENCES


