

## Historical records of snipe from Campbell Island, New Zealand

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**Abstract** Four historical records of snipe from Campbell Island in the New Zealand subantarctic are reviewed to determine whether any may refer to the recently discovered Campbell Island snipe (*Coenocorypha* sp.). It is concluded that none of the records is likely to have been Campbell Island snipe, and that Norway rats (*Rattus norvegicus*) probably reached Campbell Island before 1840. An 1840 record of “a *Scolopax*” may have been *Coenocorypha*, but this is not supported by any documentation or specimen. All other records were errors in identification referring to bar-tailed godwits (*Limosa lapponica*), or incorrect recording of the location where snipe were seen. Three “snipe” specimens shot on Campbell Island in 1894 were located in the Museum of Victoria and are bar-tailed godwits.

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### INTRODUCTION

The dramatic discovery of *Coenocorypha* snipe on Jacquemart Island in the Campbell Island group (Judd 1998) invites re-evaluation of four historical reports of “snipe” on Campbell Island between 1840 and 1924 (Plunket 1912; Westerskov 1960; Kerr 1976). Until Dave Barker, Jeremy Carroll, and James Fraser discovered snipe on rat-free 19 ha Jacquemart Island on 9 Nov 1997, there was no evidence that snipe were ever present in the Campbell Island group. Westerskov (1960) and Kerr (1976) both suggested that early reports of “a *Scolopax*” and “snipe” from Campbell Island were probably bar-tailed godwits (*Limosa lapponica*). However, there is now little doubt that *Coenocorypha* snipe were present on 11,268 ha Campbell Island (52°32' S 169°08' E) before the arrival of Norway rats (*Rattus norvegicus*) in the early nineteenth century (Atkinson 1985).

*Coenocorypha* snipe are extremely vulnerable to predation by introduced rats and cats (*Felis catus*) (Miskelly 1987) and are unlikely to have survived on Campbell Island for long after rats colonised. There is no record of when rats reached Campbell Island, but they

were “numerous” in 1868 (Armstrong 1868) some 58 years after the island was discovered. In contrast, cats were not introduced to Campbell Island until after 1916 (Dilks 1979), and so are not implicated in the extinction of snipe there.

It is possible that snipe occasionally fly the 550 m to Campbell Island from Jacquemart Island, and so any records of snipe from Campbell Island need to be checked to confirm, if possible, their identity.

### HISTORICAL RECORDS

#### Robert McCormick, 1840

The first naturalists to visit Campbell Island arrived aboard HM ships *Erebus* and *Terror* under the command of James Clark Ross in Dec 1840 (Ross 1847). There was ample opportunity for rats to have colonised Campbell Island before 1840. After its discovery in 1810, more than 20 sealing vessels are recorded as having visited the island, and there is little doubt that there were many other undocumented visits (Kerr 1976). However, there is no direct evidence that rats were present on Campbell Island when the *Erebus* and *Terror* expedition arrived.

The surgeon on HMS *Erebus*, Dr Robert McCormick

(1800-1890), undertook zoological records of the expedition. McCormick (1842) implied that rats were not present when he wrote “There is no species of *Mammalia* [on Auckland and Campbell Islands], except the common hog, now running wild in the woods [on main Auckland Island]”. This statement is clearly in error, as McCormick’s own unpublished diary entry for the Auckland Islands on 24 Nov 1840 recorded that “A cat and two kittens were found...and the two latter were sent on board to-day” (Alexander Turnbull Collection MS Papers 6640). Perhaps McCormick also overlooked the presence of rats.

Another approach to determining whether rats were on Campbell Island in 1840 is to look at the species of birds recorded by McCormick in relation to their expected vulnerability to rat predation. Given current knowledge of the presence of remnant populations of landbirds and waterbirds on rat-free islets around Campbell Island, it is likely that Campbell Island teal (*Anas nesiotis*), Campbell Island snipe (*Coenocorypha* sp.) and Auckland Island pipit (*Anthus novaeseelandiae aucklandicus*) were all present on Campbell Island before rats became established. Unfortunately, McCormick’s bird records from Campbell Island are equivocal and inconsistent.

The official ornithological record of the *Erebus* and *Terror* expedition was compiled by G.R. Gray, who recorded yellow-eyed penguin (*Megadyptes antipodes*), grey duck (*Anas superciliosa*) and subantarctic skua (*Catharacta skua lonnbergi*) as being present on Campbell Island (Gray 1845). These specimens were deposited in the British Museum, which subsequently became the British Museum (Natural History) (BMNH) and is now called The Natural History Museum. For clarity, this institution is referred to throughout as the BMNH. The three specimens remain in the BMNH (BMNH 1842.12.16.51: *Catharacta skua*, “*Lestris* No. 48”; BMNH 1842.12.16.62: *Anas superciliosa*, “No. 49”; BMNH 1842.12.16.66: *Megadyptes antipodes*, “*Spheniscus* No. 50”; Joanne Cooper, pers. comm.). The numbers 48-50 are thought to be field collection numbers assigned by McCormick, and follow in sequence from specimens collected at the Auckland Islands (copies of unpublished acquisition registers provided by Joanne Cooper and Robert Prys-Jones, pers. comm.). The register also lists specimen BMNH 1842.12.16.56 (“*Larus* No. 46”) as being from Campbell Island. However, the existing label on this southern black-backed gull (*Larus dominicanus*) specimen gives the locality as “Auckland

Islands, NZ”. There is no original field tag. As McCormick usually numbered specimens chronologically, and specimen No. 47 is a red-billed gull (*Larus novaehollandiae*) from the Auckland Islands, it is likely that BMNH 1842.12.16.56 (i.e. “No. 46”) was collected at the Auckland Islands, and that the register entry is incorrect.

McCormick himself published 2 accounts of his 3 days exploring on Campbell Island (14-16 Dec 1840): a brief account given to the Tasmanian Society (McCormick 1842) and his diary-like memoirs (McCormick 1884). In the former account, McCormick recorded the following bird species from Campbell Island: “*Diomedea exulans* [= *D. epomophora*], four or five kinds of petrel breeding underground, an *Aptenodytes* [= *M. antipodes*, see above], a species of *Phalacrocorax* [= *Leucocarbo campbelli*], a New Zealand species of duck [= *A. superciliosa*, see above], a merganser [= *Mergus ?australis*], a *Scolopax*, a raptorial gull [= *Catharacta skua*] and two species of *Larus* [= *L. dominicanus* and *L. novaehollandiae*]”. McCormick (1842) specifically mentioned that he “did not meet with a single land bird, which is rather extraordinary; as the island, although much less wooded than Auckland, nevertheless has many of its valleys thickly clothed with underwood; the general character of the vegetation is very similar, and the latitude is not much further south”.

McCormick’s 1884 account is less informative, mentioning only albatrosses, “lestrises” [= *Catharacta skua*] and gulls. McCormick’s unpublished diary (Alexander Turnbull Collection MS Papers 6640) differs little from his 1884 memoirs, although he does refer to skinning a penguin and a duck on 18 Dec 1840. I presume that these were collected by other crew members, as their collection is not mentioned in his narrative. A few snippets on the wildlife of Campbell Island are also contained in the unpublished logs of HM ships *Erebus* and *Terror* (Alexander Turnbull Collection Micro MS Coll. 5, Reels 5474 & 1597 respectively), but these contain no mention of birds seen ashore.

What was the *Scolopax* recorded by McCormick (1842)? The genus *Scolopax* now includes only the woodcocks, but in the 1700s it included many members of the family Scolopacidae, including species now assigned to the genera *Limosa*, *Numenius*, and *Tringa* (e.g., see Oliver 1955; Cramp & Simmons 1983; Turbott 1990; Higgins & Davies 1996). By the early 1800s, the definition of *Scolopax* had narrowed to include only

woodcock and snipe (e.g., Cramp & Simmons 1983; Higgins & Davies 1996), and so a competent naturalist then would probably have assigned any new species of snipe found to *Scolopax*.

McCormick was familiar with *Coenocorypha* snipe, having collected the type specimens for the genus on Enderby Island, Auckland Islands less than 2 weeks before arriving at Campbell Island (McCormick 1884). Unfortunately, he did not mention the Auckland Island snipe (later named *Coenocorypha aucklandica aucklandica*) in his 1842 account where he recorded “a *Scolopax*” at Campbell Island. In contrast, both his unpublished diary and his 1884 account used the name “snipe” several times for the birds seen and shot on Enderby Island, but made no mention of the presence of any scolopacid on Campbell Island. As McCormick did not use the term “snipe” for the Campbell Island bird, I presume that he considered it to be different from the birds seen on Enderby Island, and it is therefore likely to have been a vagrant holarctic wader. It is also likely that the *Scolopax* and merganser were reported to McCormick by crewmates, as they are not mentioned in his diary (Alexander Turnbull Collection MS Papers 6640).

It is possible that a member of the *Erebus* and *Terror* expedition did collect a “*Scolopax*” specimen on Campbell Island, as not all the bird specimens collected ended up in the official expedition collection. McCormick himself retained some “duplicate” specimens, which were bequeathed to the BMNH (Sharpe 1906; Keevil 1943) and included at least 4 Campbell Island specimens: BMNH 1890.12.13.21 – 23 (all eggs of royal albatross *D. epomophora*) and BMNH 1891.6.16.44 (skin of *D. epomophora*). Sharpe (1906) stated that many more of McCormick’s specimens had to be destroyed as they were badly moth-eaten. McCormick also contributed specimens to the osteological collection of the Hunterian Museum, Royal College of Surgeons (Keevil 1943). The Royal College of Surgeons was bombed in 1941 and much of the surviving material from the Hunterian Collection was transferred to the BMNH (Elizabeth Allen, pers. comm.). Unfortunately no Campbell Island specimens were among this material (Sam Collenette, pers. comm.).

Both Robert McCormick and Sir James Clark Ross provided specimens collected during the *Erebus* and *Terror* expedition to John Gould (Whitley 1938). Gould sold his collection of Australian birds in 1847 to Dr Thomas B. Wilson, patron of the Academy of Natural Sciences of Philadelphia (Stone 1938). Wilson’s entire

collection of some 25,000 birds, including 1,858 from the Gould collection, was presented to the Academy in 1860, where the collection remains today. There are no specimens labelled with the names “McCormick” or “Ross” among the Gould collection, nor are there any specimens with the locality “Campbell Island” (Nate Rice, pers. comm.). Gould’s personal collection of 6,315 bird specimens was bequeathed to the BMNH soon after his death in 1881 (Sharpe 1906). The register entries for Gould’s bequest are “a bit of a nightmare” (Robert Prys-Jones, pers. comm.); they do not follow any strict taxonomic order, much is registered only under genus name, collectors’ names are rarely given, and even localities are often lacking. However, there are no *Coenocorypha aucklandica*, *Gallinago hardwickii*, or *Limosa lapponica* specimens from Campbell Island currently held in the BMNH collection (Joanne Cooper, pers. comm.).

While no scolopacid specimens from Campbell Island have been located in the Gould or Hunterian Museum collections, it is possible that McCormick or other expedition members sold bird specimens to other collections. It is also possible that the Campbell Island *Scolopax* was not labelled by locality and has remained unrecognised among the specimens collected by the *Erebus* and *Terror* expedition while in New Zealand waters. Shorebirds from New Zealand collected by the expedition and recorded in the BMNH acquisition register are listed in Table 1. McCormick does not give much information about collection of the 2 godwit specimens. In his memoirs (1884) he recorded that “I shot one small sandpiper out of a flock” while at the Bay of Islands on 19 Oct 1841. This is a misquote from his original diary entry (Alexander Turnbull Collection Micro MS Coll. 20-2665) where he wrote “and shot a ‘Tringa’ from a small flock”. It is likely that this was specimen BMNH 1842.12.16.61, which bears the locality “Bay of Islands”. It is possible that the remaining bar-tailed godwit specimen (BMNH 1844.1.18.141) is the Campbell Island “*Scolopax*”, but it is more likely that no specimen was collected.

McCormick did not record Campbell Island teal or Auckland Island pipit on Campbell Island, and it now appears that he did not record Campbell Island snipe either. In contrast, teal, pipit, and snipe were all recorded and collected at Port Ross, Auckland Islands, immediately before the expedition reached Campbell Island (McCormick 1884). This suggests that rats were already

**Table 1** Shorebirds (Scolopacidae and Charadriidae) collected in New Zealand and outlying islands by the *Erebus* and *Terror* expedition, and registered in the BMNH. Copies of unpublished acquisition register entries and label details provided by Joanne Cooper and Robert Prys-Jones (BMNH).

Species	Registration no.	Registration details
<i>Coenocorypha aucklandica</i>	BMNH 1842.12.16.33	<i>Scolopax</i> , Auckland Island, No. 34 <sup>1</sup>
	BMNH 1842.12.16.76	<i>Scolopax</i> , Auckland Island, No. 38 Male
	BMNH 1842.12.16.77	<i>Scolopax</i> , Auckland Island, No. 38 Female [Syntypes of <i>Coenocorypha aucklandica</i> ]
	BMNH 1890.12.13.16	<i>Gallinago aucklandicus</i> , Enderby Island, Auckland Island group, Dec. 3. Coll. R. McCormick. McCormick Bequest.
<i>Limosa lapponica</i>	BMNH 1842.12.16.61	<i>Limosa</i> , Bay of Islands, No. 60
	BMNH 1844.1.18.141	<i>Limosa</i> , New Zealand, Female [Syntypes of <i>L. lapponica</i> var. <i>Novæ Zealandiæ</i> ]
<i>Thinornis novaeseelandiae</i>	BMNH 1842.12.16.78	<i>Tringa</i> , Auckland Island, No. 36 Female [Type of <i>Thinornis rossi</i> ]

<sup>1</sup>Specimen not located Nov 1999

present on Campbell Island in 1840. The absence of pipits is particularly noteworthy, especially given the emphasis that McCormick (1842) placed on the complete lack of landbirds. Pipits are abundant on rat-free islands in the New Zealand subantarctic, including on islets off Campbell Island (Foggo 1984), yet are rarely reported from rat-infested Campbell Island itself (Bailey & Sorensen 1962; Foggo 1984). If rats had already exterminated these three species on Campbell Island before 1840, then it is highly likely that other vulnerable species were also lost before the arrival of the *Erebus* & *Terror* expedition.

### C. E. Borchgrevink, 1894

The second report of snipe on Campbell Island was of 3 birds shot by Carsten Egeberg Borchgrevink in Oct 1894. Borchgrevink (1864-1934) was a Norwegian naturalist/explorer who had emigrated to Australia, and was later to lead the first expedition to overwinter on mainland Antarctica (Borchgrevink 1901). On his first voyage into Antarctic waters, Borchgrevink joined the Norwegian steamer *Antarctic* in Melbourne as a “generally useful hand”, but was able to dedicate much of his time to scientific studies (Borchgrevink 1895a; Bull 1896). While at Campbell Island 26-30 Oct 1894, Borchgrevink (1895a) wrote that when “hunting for ducks, which were about in great numbers, I came upon three snipe (*Gallinago Australis*), which I succeeded in securing”. Borchgrevink read the same paper to the Sixth International Geographical Congress in London on 1 Aug

1895, and published an abstract (Borchgrevink 1895b). In this account, Borchgrevink described the birds as “three graceful waders of the snipe type (*Novæ Zealandiæ*)”, although in the full report (Borchgrevink 1896) he did not give a scientific name to the birds. The expedition leader, Henric Johan Bull, also wrote that “On Campbell Islands a new and graceful species of wader was shot by Mr. Borchgrevinck [sic]” (Bull 1896).

By 1894, Norway rats had been abundant on Campbell Island for over 25 years and had undoubtedly exterminated *Coenocorypha* snipe on the main island. It is unlikely that Borchgrevink could have found and shot 3 vagrant Campbell Island snipe from Jacquemart Island during a 4-day visit, given that no evidence for such vagrancy has been noted in the ensuing century. So what were the “snipe” shot by Borchgrevink?

In the 1890s, *Gallinago australis* was the name given to what is now known as the Japanese snipe (*G. hardwickii*) (e.g., Cheeseman 1899, based on Gould 1865). The genus *Gallinago* has only been used for snipe. While now confined to the true snipes (*sensu* Tuck 1972), Gray (1845) included Auckland Island snipe in *Gallinago* before deciding to create a new genus (*Coenocorypha*) for New Zealand snipes (Gray 1855). It is apparent that Borchgrevink originally considered that the birds were snipe, of which *G. hardwickii* is the most likely contender. Japanese snipe have not otherwise been recorded from Campbell Island, but there are sightings from the Snares Islands (pers. obs.) and Macquarie Island (Higgins & Davies 1996).

**Table 2** Examples of use of permutations of the name *Limosa Novae Zealandiae* for the eastern bar-tailed godwit (*L. lapponica*) in New Zealand 1845-1909.

Scientific name	References
<i>Limosa lapponica</i> , var. <i>Novae Zealandiae</i>	Gray 1845
<i>Limosa novae zealandiae</i>	Gray 1849; Sharpe 1875
<i>Limosa novae-zealandiae</i>	Buller 1869; Finsch 1869, 1875; Hutton 1869; Pycroft 1899
<i>Limosa novae-zelandiae</i>	Hutton 1870
<i>Limosa Novae-Zealandiae</i>	Finsch 1872
<i>Limosa Novae Zelandiae</i>	Potts 1882
<i>Limosa novae-zealandiae</i>	Hutton & Drummond 1909; Waite 1909

However, Borchgrevink's (1895b) subsequent use of the specific epithet "*Novae Zealandiae*" casts doubt on the likelihood that these birds were Japanese snipe. *Limosa Novae Zealandiae* (and permutations) was the name in regular use in New Zealand for the bar-tailed godwit from 1845 (when G.R. Gray proposed the name based on *Erebus* and *Terror* specimens) until the publication of W.L. Buller's *A history of the birds of New Zealand* in 1873. The name was still used occasionally until at least 1909 (Table 2). At the time of his presentation to the International Geographical Congress, Borchgrevink appears to have decided that the birds were godwits, although there is still some confusion possible because of the birds not being assigned to a genus.

Attempts to locate bird specimens collected by Borchgrevink in 1894-95 (see Appendix and Acknowledgements) eventually revealed that the 3 "snipe" are in the Museum of Victoria collection (Rory O'Brien, pers. comm.). The 3 birds are all eastern bar-tailed godwits (*Limosa lapponica baueri*); they were collected on Campbell Island and were presented to the museum by C.E. Borchgrevink (Fig. 1). This is the earliest record of bar-tailed godwit from Campbell Island. The specimens were all entered in the Museum of Victoria register as "*Limosa Novae Zealandiae* (Gray)", and it is therefore likely that the then Director of the Museum of Victoria (Sir Frederick McCoy) corrected Borchgrevink's misidentification. Attempts to locate any correspondence between McCoy and Borchgrevink have been unsuccessful.

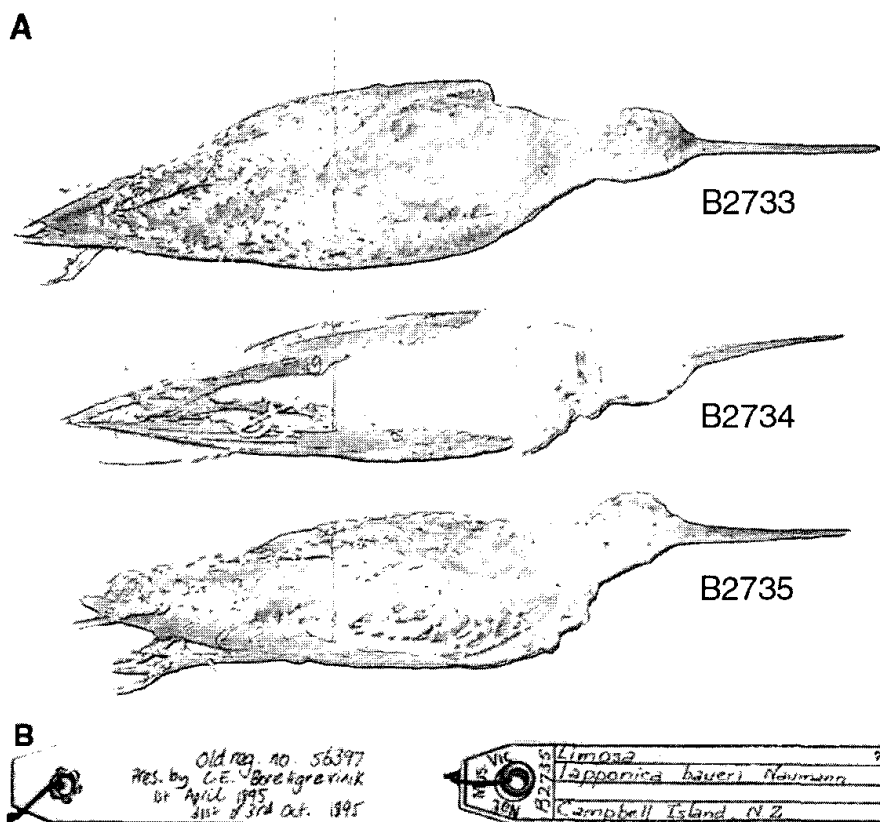
It appears that these 3 godwits were the only bird specimens that Borchgrevink collected at Campbell Island in 1894. However, Borchgrevink presented at least 10 seabird specimens labelled "Antarctic Ocean" or "Southern Ocean" to the Museum of Victoria in 1895. No waders were among the 15 bird specimens collected at Campbell Island during Borchgrevink's 1898-1900 *Southern Cross* expedition (Sharpe 1902).

### Lord Plunket, 1907

The third record of snipe on Campbell Island is in a paper read by Lord Plunket to the Royal Colonial Institute in London on 5 Dec 1911 (Plunket 1912). Lord Plunket (then Governor of New Zealand) visited all the New Zealand subantarctic islands aboard the Government steamer *Tutanekai* in Jan-Feb 1907, accompanied by Professor William Benham and Edgar R. Waite. Plunket's account implies that they saw snipe on Campbell Island:

*"The next port was Perseverance Harbour, in the Campbell Islands...On this island we came across the wandering albatross, a darker and smaller edition of his royal cousin. The land birds on all these islands hardly fly at all, but only flutter, and then along the ground or hop from bough to bough... the sight of the professors catching snipe with butterfly nets completely upset my Irish shooting notions. We came across the flightless duck... this duck, though he never attempts to fly or to dive, is not as easy as the snipe to catch... From the Campbells the Tutanekai turned her bows north again..."*

While Plunket's (1912) description of snipe catching clearly fits the behaviour of *Coenocorypha* snipe, it is evident that he was actually describing the wildlife of Adams Island in the Auckland Islands, and that he confused the 2 islands in his paper. For example, on Adams Island on 2 Feb 1907, Plunket described "climbing to see the royal albatross on its nest. We found numbers of them about 500 feet up the side of the mountain, which gave it the appearance of being dotted at intervals with large white stones". The most recent estimate of the numbers of large albatrosses nesting on these islands (Gales 1998) reveals that on Campbell Island there are 7,800 pairs year<sup>-1</sup> of royal albatross and 6 pairs year<sup>-1</sup> of wandering albatross (*D. exulans*). In contrast, there are now 5,800 pairs year<sup>-1</sup> of wandering albatross breeding on Adams Island, and only 15 pairs year<sup>-1</sup> of royal albatross (Gales 1998). Clearly, Plunket saw large numbers of wandering albatrosses on Adams Island, and



**Fig. 1 A.** The 3 “snipe” shot by Carsten Egeberg Borchgrevink on Campbell Island, New Zealand in Oct 1894. The specimens were presented to the Museum of Victoria by “C.E. Boreligrevinik” on 1 April 1895 and registered there on 31 Oct 1895. They are all held at the Museum of Victoria (B2733, B2734, B2735, old registration numbers 56395, 56396, 56397 respectively). All three specimens are eastern bar-tailed godwits (*Limosa lapponica baueri*). **B.** Label details for B2735.

large numbers of royal albatrosses on Campbell Island, and presumably confused other wildlife sightings (such as snipe and teal) similarly.

Also, at Carnley Harbour (Auckland Islands) Plunket (1912) described a graveyard, “one of whose rotting boards records the death in earlier days of a sailor by starvation”. This description fits the epitaph to John Mahoney at the Hardwicke cemetery, Port Ross, 30 km north of Carnley Harbour (Fraser 1986). It is apparent that Plunket’s narrative jumped from topic to topic with scant regard to the accuracy of locations to which he referred.

Professor Benham and Edgar Waite were both zoologists and prominent members of the Philosophical Institute of Canterbury. Both men were members of the subsequent Philosophical Institute of Canterbury expedition to Auckland and Campbell Islands in Nov 1907, the results of which (including their Feb 1907 observations) were published in Chilton (1909). Waite’s (1909) chapter makes no mention of snipe or teal on Campbell Island, and also correctly identifies the predominant (and, at that time, the only known) species of large albatross breeding on Campbell Island. Two Auckland Island snipe specimens collected by E. R. Waite on Adams Island in Feb 1907 remain in the Museum of

New Zealand/Te Papa Tongarewa collection (Fig. 2).

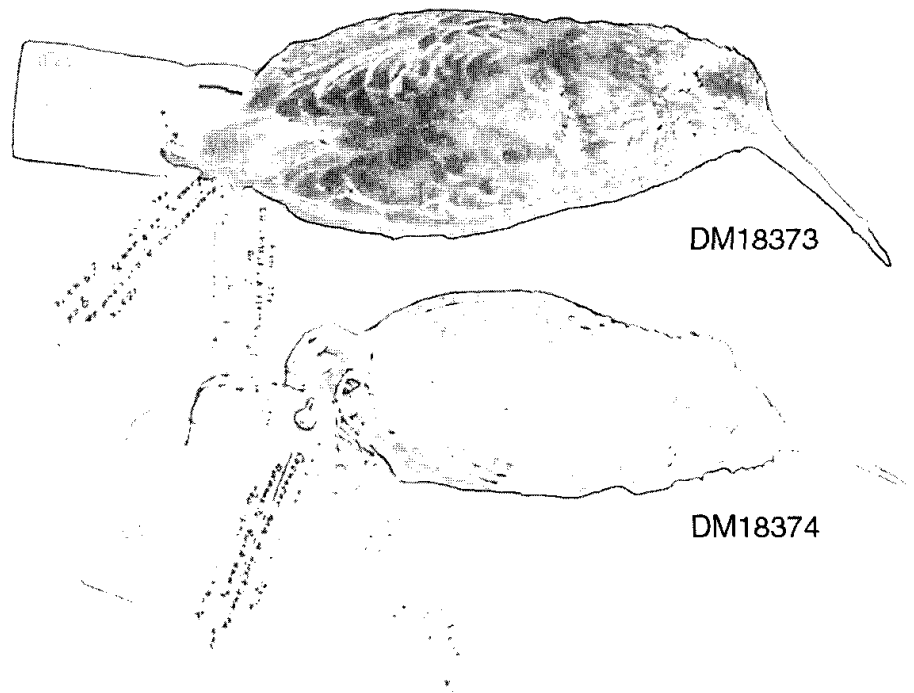
Williams & Robertson (1997) discussed the authenticity of Plunket’s (1912) account when describing the history of Campbell Island teal. They also concluded that Plunket was describing events at the Auckland Islands. Ironically, Williams & Robertson (1997) used the supposed co-occurrence of snipe and teal on Campbell Island as one of the main reasons to doubt Plunket’s claims.

#### A.J. Villiers, 1924

The fourth record of snipe from Campbell Island is from Alan Villiers, an Australian crewmember aboard the Norwegian whaling vessel *Sir James Clark Ross* in 1923–24 (Villiers 1924, 1925). Villiers spent a weekend exploring Campbell Island in March 1924 and also spent much time with the resident shepherds, one of whom “was very interested in the fauna and flora of the island” (Villiers 1924, 1925). Villiers recorded that “Odd pairs of snipe have been seen”, almost certainly based on what was written in this shepherd’s diary (Villiers 1925: 264).

Who was Villiers’ shepherd-naturalist? Unfortunately, neither of Villiers’ books nor his unpublished diary (National Library of Australia, RAAM No. 10781 Papers, Series 4, Box 80, Item 6) identify him. Four shepherds

**Fig. 2** The snipe reported from “Campbell Island” by Lord Plunket (1912). Both are Auckland Island snipe (*Coenocorypha aucklandica aucklandica*) collected on Adams Island by E.R. Waite in Feb 1907. The specimens are held in Museum of New Zealand/Te Papa Tongarewa (DM18373, DM18374).



were present on Campbell Island from 23 March 1923 to 2 April 1924 (Kerr 1976). Their work diary is held in the Hocken Library, University of Otago (Campbell Island diary, 1923-24, Misc-MS-1487). No reference is made therein to fauna (Janine Delaney, pers. comm.), but the names of the party are given as “B. O’Brien, Green, Middleditch and McLeod” (diary entry for 30 April 1923).

Attempts to trace these men through surviving relatives revealed that J.A. (Lex) Macleod lived at Dipton West (Keith Macleod, pers. comm.), and that Miles Middleditch lived at Port Chalmers (A.J. Middleditch, pers. comm.). Neither of these men had a particular interest in natural history, nor are they known to have kept diaries.

Norm Judd (pers. comm.) corresponded with the late A. C. (Cecil) Green in the early 1980s. Cecil Green was then living in Merewether, New South Wales, and provided Judd with a lot of detailed information about the party and their work (letters to Norm Judd dated 16 Nov 1982, 21 Feb 1983 and 5 March 1984). Green’s letters make it clear that he had a keen interest in natural history: “Many beautiful flowering plants indigenous to the island grew in sheltered spots and I collected quite a selection of specimens for Dunedin Botanical gardens and different species of insect life that I collected in bottles for [Christchurch] museum... Hundreds of Royal albatross bred on the island laying their single eggs on the most exposed sites... There was also the Adele [Rockhopper] penguin, millions of them, thousands anyway, also wandering albatross, the mollymawk and smaller breeds

of bird.” (letter of 16 Nov 1982). In a subsequent letter (21 Feb 1983), Green also noted that “Wherever we went I collected bugs, plants etc., and was the subject of a fair amount of good natured back chat”.

Unfortunately Cecil Green made no reference to having kept his diary from 1923-24, and so it is not possible to provide any further detail about the snipe that Villiers recorded. However, Green did refer to the close relationship that he had with Alan Villiers both on Campbell Island and later on board the *Sir James Clark Ross* (letter of 16 Nov 1982).

Westerskov (1960) suggested that the snipe reported by Villiers “undoubtedly were godwits as the species in New Zealand even today is often called snipe by sportsmen” (see also Moncrieff (1925) for a contemporary example of godwits being called snipe). Bar-tailed godwits were frequent vagrants to Campbell Island earlier this century (Waite 1909; Bailey & Sorensen 1962) and 4 specimens are in the Museum of New Zealand (Alan Tennyson, pers. comm.). It is notable that Villiers did not report any other wader species besides “snipe”.

## DISCUSSION

Campbell Island snipe were probably extinct on main Campbell Island before 1840. It is likely that Norway rats were already present on the island by 1840, as evident from the apparent absence then of Auckland Island pipit and Campbell Island teal. There is a possibility that the

*Scolopax* reported by Robert McCormick (1842) may have been a Campbell Island snipe, but documentation is insufficient to support this, and it is considered more likely that this record refers to a migratory wader species.

McCormick's (1842) unconfirmed report of a merganser raises the possibility that rats had not been on Campbell Island long before the *Erebus* and *Terror* expedition arrived. Mergansers are large enough that adults may not have been vulnerable to rat predation, but their eggs and ducklings surely were. If, by 1840, rats had been present on Campbell Island long enough to exterminate pipits, teal, and snipe but not long enough for all adult mergansers to have died out, then perhaps rats had only been present on Campbell Island for about a decade. The only shipwreck recorded for Campbell Island was the sealing brig *Perseverance* in 1828 (Kerr 1976), ironically the same vessel with which Frederick Hasselburgh had discovered Campbell Island in 1810. Based on timing and opportunity, I suggest that the wreck of the *Perseverance* in Oct 1828 is the most plausible means by which Norway rats colonised Campbell Island. This hypothesis would be strengthened (and McCormick's record confirmed) if merganser bones were found on Campbell Island.

The "snipe" specimens collected by C.E. Borchgrevink in 1894 are here shown to be bar-tailed godwits and it is likely that the 1924 record also referred to bar-tailed godwits. Lord Plunket's (1912) record of snipe on Campbell Island is clearly an error resulting from confusion between Adams Island (in the Auckland Islands) and Campbell Island. There is thus little doubt that the snipe discovered on Jacquemart Island in Nov 1997 was previously unknown to science.

If Norway rats had already caused local extinctions of snipe, teal, and pipit on Campbell Island by 1840, then it is highly likely that other landbird species had also been extirpated. The anomalous absence of *Cyanoramphus* parakeets on Campbell Island could well be explained by the rats arriving before the naturalists.

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## APPENDIX

### **Collections searched for specimens collected by C.E. Borchgrevink at Campbell Island**

Curators were asked to check specimens of *Coenocorypha aucklandica*, *Gallinago hardwickii*, *Limosa lapponica*, *Diomedea epomophora*, *Anas superciliosa*, *Pagodroma nivea*, *Aptenodytes forsteri*, *Pygoscelis adeliae*, and *Catharacta maccormicki*.

AUSTRALIA Australian Antarctic Division (AAD); Australian Museum, Sydney (AMS); Australian National Wildlife Collection, CSIRO (CSIRO); Macleay Museum, University of Sydney (MM); Museum of Victoria (MV); Queen Victoria Museum, Launceston (QVM); Queensland Museum (QM); South Australian Museum

(SAM); Tasmanian Museum and Art Gallery (TMAG); West Australian Museum (WAM).

NEW ZEALAND Auckland Museum (AM); Canterbury Museum (CM); Museum of New Zealand/Te Papa Tongarewa (MNZ); Otago Museum (OM); Southland Museum (SM).

NORWAY Norwegian University of Science and Technology (NUST); Stavanger Museum (StM), Tromsø University Museum (TUM); University of Bergen Zoology Museum (UBZM); University of Oslo Zoology Museum (UOZM) (formerly Christiania University, where Borchgrevink studied before emigrating to Australia; Bull 1896).

UNITED KINGDOM Natural History Museum (Tring) (BMNH – formerly British Museum (Natural History)).