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Sightings of right and humpback whales in the South Atlantic from nineteenth-century whaling logbooks –a preliminary note

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Abstract

Sightings of humpback and southern right whales on three voyages to the South Atlantic by two nineteenth-century whaleships are presented as an indication of how such data can provide information on distributions and migration routes in areas otherwise infrequently surveyed.

Introduction

The value of the information recorded in the logbooks and journals of nineteenth-century whale ships is well known, and although the majority of analyses to date have concerned the catch data included therein, the recorded sightings can also prove useful (e.g. Reeves *et al*., 2004).

This is particularly the case where the historical whaling operations covered open ocean areas. One such area is the temperate South Atlantic, off limits to pelagic whaling by modern factory ships (although illegal catches were made by Soviet expeditions), and rarely surveyed even today.

In this short note I present some observations on the distribution of sightings of right and humpback whales from three voyages of two different US whalers that are interesting in the context of recent Scientific Committee discussions about Southern Hemisphere humpback whale migration links, and growing interest in similar information for southern right whales.

Material and methods

The logbooks of three voyages were examined.

1. Bark *Hero* of Westport, Mass. Captain Samuel Tobey. 16 June 1806 – 20 November 1807. Log keeper Paul Wainer. Repository Old Dartmouth Historical Society.

2. Ship *Jones* of New London. Captain Erastus Fish. 23 May 1831 – 26 February 1832. Log keeper unknown. Repository Penoboscot Marine Museum, Seasport.

3. Ship *Jones* of New London. Captain Erastus Fish. 17 May 1832 – 16 April 1833. Log keeper unknown. Repository Penoboscot Marine Museum, Seasport.

Daily entries were examined and the following data recorded (if available): date, location, whales seen, whether boats lowered, results of capture attempts, number of vessels seen, ships spoke and their cargoes. If the ship was clearly in transit, locations were only recorded every week.

These logs were not specifically chosen for this purpose, but were simply ones that were examined in the course of researching information on historical exploitation of southern African right whales. As such they cannot be considered as representative but are only presented as examples of what a larger sample might yield.

Results

Humpback whales

Although attempts were made to take humpback whales on the 1831/32 voyage of the *Jones*, they were clearly not the principal target species for any of these three voyages. Nevertheless, sightings of humpback whales were reported on two of them.

After a bout of right whaling southwest of Cape Town from 23 September to 14 October 1806, that was clearly frustrated by the rough weather conditions, the *Hero* decided to shift to the Delagoa Bay whaling ground. As they moved eastwards south of South Africa, they encountered what appears to be a migrating stream or streams of humpback whales. Every day between 15 and 20 October, the logbook recorded "saw plenty of humpbacks". Over this period the noon positions ranged from latitudes of 35° 48'- 37° 07'S and longitudes of 21°28' to 22°28'E, or along the southeast side of the Agulhas Bank, between 130 and 155 n miles southeast of Cape Agulhas (Fig. 1). Five days later, at 35° 05'S 29° 34'E, the logbook records a sighting of 2 humpback whales, on 2 November at 37° 45'S 29°19'E, "saw plenty of humpbacks", and on 30 November at 31°20'S 34°52'E, "saw humpbacks". No attempts seem to have been made to take any of these whales. Thereafter, despite an extensive period of sperm whaling off southern Mozambique and northern KwaZulu-Natal, South Africa, from 6 December 1806 to 25 May 1807, no humpback whale sightings were recorded. There are no logbook entries from 25 May until 23 August 1807, at which time the vessel was already 22 days out from Delagoa Bay and clearly on its way home.

As the ship *Jones* travelled southwards on its way to the Tristan whaling grounds in 1831, it encountered humpback whales on 5 days between 30 July and 11 August (Fig. 2). Unfortunately locations are not regularly recorded (and sometimes only latitudes are given), but the first encounter took place at 16° 54'S 28°31'W. The next two sightings were four and six days later, on 3 and 5 August respectively. On 6 August the vessel's latitude was given as 23° 30'S and two days later at the next humpback sighting as 25° 03'S. The last sighting in the series took place on 11 August at 28°27'S 28°56'W. As the vessel lowered for humpbacks at each sighting except the last, the overall latitudinal coverage of 0.94°/day from 30 July to 6 August, 0.78°/day from 6 to 8 August, and 1.13°/day thereafter (and the very similar longitudes at the beginning and end of the episode) seem to suggest that the vessel was maintaining a steady southward course throughout. On this assumption, there seemed to be a number of humpback whales migrating far offshore, between 500 and 1000 n. miles from the Brazilian coast.

During its subsequent extended period of right whaling, the *Jones* noted sightings of humpback whales on 25 October at 36°38'S 5° 00'W and on 30 October at 37°27'S 8°40'W. No attempts were made to catch on either occasion, and the first sighting was in fact logged as "the wrong kind".

On its subsequent voyage to the same latitudes in 1832/33, the *Jones* failed to record any sightings of humpback whales, although the log was kept in the same volume and by the same log-keeper. Interestingly, although the southward leg of the voyage took place at the same time (late July/early August), the course was substantially to the east of that in 1831, around longitudes of 16° – 18°30'W (Fig. 3).

Southern right whales

After an unsuccessful cruise through the Atlantic, the *Hero* saw its first right whale on 22 September 1806 at 35° 40'S 11°59'E, and immediately began preparing for whaling. Sightings of right whales were recorded on 13 of the following 23 days, but on at least 6 days rough weather made it impossible to strike or secure a whale, or even lower a boat. Eventually after processing only one whale the decision was made to leave the whaling ground. After sailing eastwards, the *Hero* turned south and on 11 November encountered "plenty" right whales at 40° 34'S 35° 25'E. More right whales were seen on six of the subsequent 10 days, and 3 were taken, before the vessel sailed north to the Delagoa Bay ground.

During its 1831/32 cruise, the *Jones* saw its first southern right whale on 20 August 1831 at 36° 13'S 15°20'W, and thereafter reported sightings of right whales on 64 out of 129 days, before it set sail for home on 31 December. The ship must have been in a rich seam of whales, as apart from the high catch rate (34 killed over 123 days), the ship spoke another 31 vessels operating in the area, 13 of them more than once. For the four months of whaling in which it operated over 15° of longitude (13°W - 2°E), the vessel remained in the narrow latitudinal band of 35° 37' - 37° 47'S (Fig. 2).

The pattern was much the same the following season. The *Jones* arrived in the vicinity of the Tristan da Cunha group (36°42'S 12°22'W) on 26 August and reported sightings of right whales on 65 out of the 146 succeeding days before it stood for home on 19 January 1832. It killed 23 right whales and spoke another 30 vessels operating in the area, 9 of them more than once: on one day (14 September) the sighting of 15 ships was recorded. The proximity of the whalers to each other can also be judged by the fact that in this period the *Jones* encountered 7 dead whales (Table 1), of which it processed 3 (and had to surrender a fourth to the rightful owner after it had been taken alongside). Once again the vessel operated in a narrow latitudinal band, extending over 14° of longitude (13° W – 1°E) but between 36° 21' and 39° 05'S, except for the last whale which was taken at 42° 10'S (Fig. 3).

Apart from the inclement weather conditions, which were largely responsible for the frequency of unsuccessful lowerings, the behaviour of the whales also contributed to reducing the catch rate. Over the two voyages the logbook of the *Jones* made specific observations on 12 days that the right whales were "going quick" or "head out": on most occasions these resulted in the ship failing to even lower a boat.

"*saw another whale going as if he was sent for, but did not lower cos why cos he was out of sight before we could see him twice*". [Ship *Jones*, 26 November 1831]

Of these observations, 1 occurred in October, 3 in November and 8 in December, and the direction was given as north-east on one occasion but west on another 4 occasions (all in December).

Discussion

The most likely interpretation of the sightings of humpback whales from the *Hero* is that these were individuals on their spring migration from the East African coast to higher latitudes. The possibility that these might have been West African animals is reduced by the fact that no humpback sightings were recorded by the same vessel during the preceding three weeks of right whaling just southwest of Cape Town. If this assumption is correct it suggests that the southern migration of East African animals has a strong south-westward component, possibly following the edge of the continental slope as far as the tip of the Agulhas Bank. In direction this would be consistent with inshore observations from Knysna, which historically indicated animals travelling in a westerly direction in spring at 23°E (Best *et al.*, 1998).

The feeding grounds for humpback whales that breed in winter on the Abrolhos Bank off Brazil include regions in the Antarctic between the longitudes of 26 and 35°W, and southward migrations there from the breeding grounds have been shown to occur several 100 n. miles from the coast (Zerbini *et al*., 2006). Observations of humpback whales in winter some 500 to 1,000 n. miles off the Brazilian coast between latitudes of 17 and 28°S in mid-winter suggest that the northward migration from this feeding ground may be similarly pelagic in nature. However given the distance offshore, the destination of these animals may not be the Abrolhos Bank, which is located at ca 18°30'S 39°30'W, but a breeding area further to the north and east. Humpback whales were taken historically in the coastal waters of Brazil around 7°S 34°30'W (Williamson, 1975) and have been sighted at the Archipelago of Fernando de Noronha at 3° 51'S 32° 25'W (Darling and Sousa-Lima, 2005), and it seems more likely that these could be destinations of the animals encountered by the *Jones* in 1831. The fact that no humpback whale sightings were reported on the 1832 transit by the same vessel 10-12° further east, suggests that this migration path is limited in its offshore displacement.

The mid-Atlantic sightings of humpback whales by the *Jones* in October 1831, in combination with three records from the Tristan da Cunha region from November to January (Best *et al*., submitted) could possibly represent migrants from the vicinity of St Helena (16° S 5° 45'W), where MacLeod and Bennett (2007) record the presence of humpback whales between the end of June and October.

The apparent concentration of right whale sightings (and right whalers) along a narrow latitudinal band in both voyages of the *Jones* suggests that the whales were distributed along some oceanographic feature such as a front, whose position was consistent between years. A similar impression is created from an inspection of the plots of right whale catches published by Townsend (1935), possibly obscured to some extent by his decision to spread the plots out to avoid congestion. The most obvious candidate for such a feature is the Sub Tropical Convergence, recently shown to be a destination for southern right whales from southern Africa (Mate and Best, this meeting). The observations of rapid movement by the whales are difficult to interpret, although satellite telemetry data have shown that southern right whales can make surprisingly rapid and direct movements when transiting between feeding grounds (Mate and Best, this meeting). Perhaps not too much should be read into the direction of movement, but it is interesting that the majority were described as moving westward, while the overall trend of movement of right whales after leaving the coast of southern Africa in spring was to the south and west (Mate and Best, this meeting).

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Table 1: Results of whaling attempts for right and humpback whales from the ship *Jones*, 1831/2 and 1832/3

Category	**Right 1831/2**	**Right 1832/3**	**Right Total**	**Hump-back**
Number of lowerings	81	77	158	4
Whales struck	46	35	81	1
Whales killed	34	23	57	1
Whales sunk/lost	6	5	11	
Whales dumped	1	1	2	
Iron drew	8	4	12	
Line cut	2	8	10	
Line parted	3	0	3	
Escaped spouting blood	1	1	2	
Dead whale seen	1	7	8	
Dead whale processed	0	3	3	
Whales processed	27	20	47	1
Boat capsized	1	0	1	
Boat stove	0	4	4	1

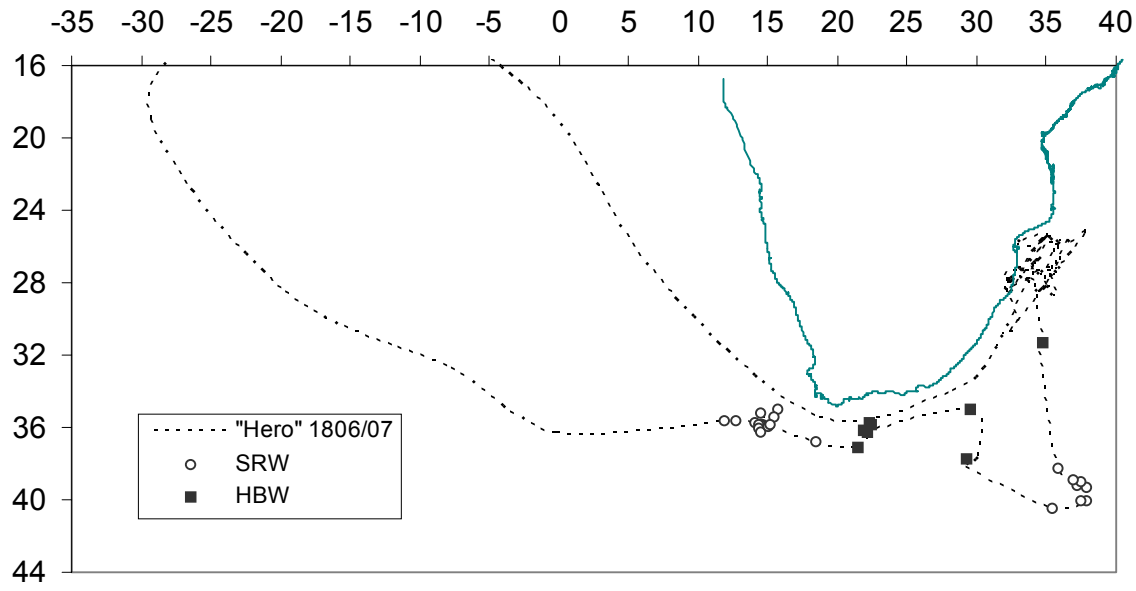

Fig. 1: Cruise track of the bark *Hero* and associated sightings of right and humpback whales in the South Atlantic and southwest Indian Ocean, 1806/07

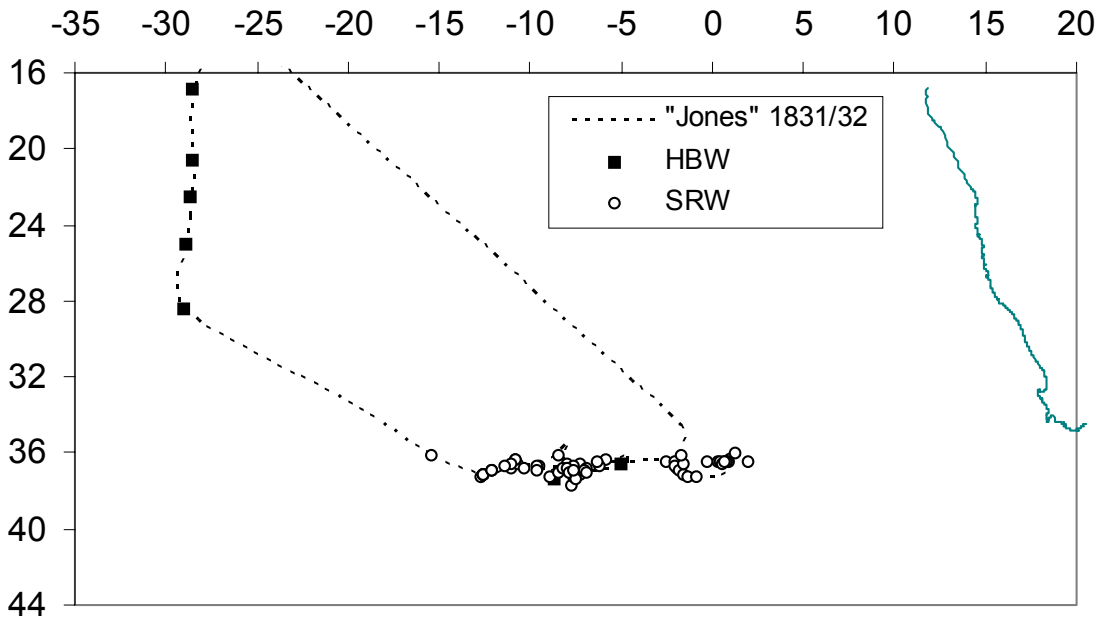

Fig. 2: Cruise track of the ship *Jones* and associated sightings of right and humpback whales in the South Atlantic Ocean, 1831/32

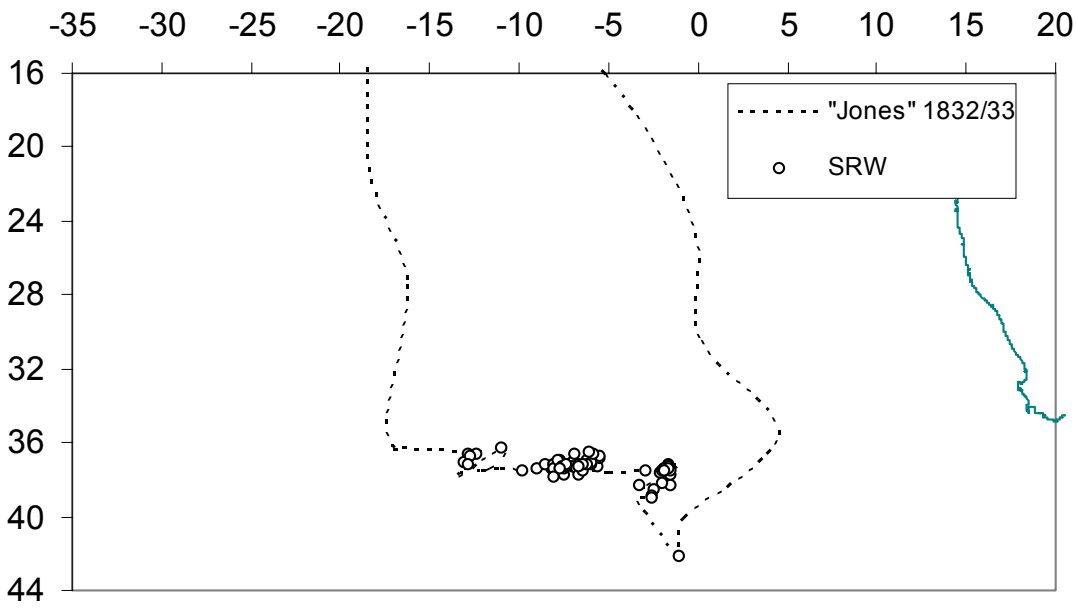

Fig. 3: Cruise track of the ship *Jones* and associated sightings of right whales in the South Atlantic Ocean, 1832/33