

## Note on three Dwarf Sperm Whales *Kogia simus* (Owen, 1866) and comments on Kogiids of Japanese Coasts

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### Summary

In 1984, 3 specimens of the genus *Kogia* were stranded on the Japanese coasts. Those animals were identified as being dwarf sperm whales *K. simus*. Identification was based on a few details concerning the external anatomy. Position and height of the dorsal fin in genus *Kogia* does not seem to be a suitable means to differentiate the two species; teeth counts seem to be a better character to distinguish them. Kogiids are cetacea who live around the Japanese coasts but they are not common.

### Introduction

The two species of the genus *Kogia*: the pygmy sperm whale *K. breviceps* (Blainville, 1833) and the dwarf sperm whale *K. simus* (Owen, 1866) differ from each other by some internal and external anatomical characters (Yamada, 1954; Watson, 1981; Minasian *et al.*, 1984 and Sylvestre, 1983).

Concerning the external differences, the head of *K. simus* is smaller than that of *K. breviceps* (Ross, 1979). Measures taken from tip of snout to centre of eye, to the insertion of flipper and to blowhole are, respectively, on 16 *K. breviceps* and 21 *K. simus* studied by Ross in South African coasts: 14.3%, 22% and 11.7% for pygmy sperm whale and 11%, 19.7% and 8.7% for dwarf sperm whale. In *K. simus*, the dorsal fin is inserted at 46% of the total body length, its height is 7.5% and its length is 14.7%. In *K. breviceps*, the dorsal fin is inserted at 52.2% of total body length and is smaller (average height of 3.6% and a length of 10% of total body length).

### Material

In 1984, 3 specimens of genus *Kogia* were reported from Japanese coasts: two in Honshu Island and another one in Okinawa Island.

In May, US soldiers found in Naha Military Port, Okinawa Prefecture, a stranded cetacean of the genus *Kogia*. The specimen was a male and was 2 m long. The specimen was transported to the Okinawa Expo Memorial Park Aquarium where he was kept

alive for 4 days. During his stay in oceanaria, the *Kogia* sp. did not feed by himself. I have no information concerning the different parts of the body which might have been kept in Japanese institutes. Dr. Uchida of Okinawa Expo Memorial Park Aquarium sent me a few pictures of this individual that I identified as being a *K. simus*. I based my identification on the position and the height of the dorsal fin. On the pictures, the position of dorsal fin is less than 50% of the total body length and the height of the fin seems to be about 5% of the body length. The fin height is the most useful character in identifying the 2 species of *Kogia* from pictures (Robineau, *et al.*, 1981).

On 4 July, a *Kogia* sp. male was found stranded dead at Hakui Takamachi, in Ishikawa Prefecture. The specimen was measured by the staff of Notojima Aquarium (measures reported in Table 1). By examining the data, I based my identification of the species on 6 measurements; each is important to distinguish the two species. The head of this specimen is small (from tip of snout to centre of eye: 8%; to the anterior insertion of the flipper: 14.8% and to blowhole: 7.63%) compared to the average percentages calculated on 16 *K. breviceps* by Ross (1979) (14.3%, 22% and 11.7%). The dorsal fin is placed on the anterior edge of the back (40.8% of total body length) and its height is higher than 5% (8%). The length of the Hakui Takamachi specimen's dorsal fin is 15.26% which is more than the 10% found in *K. breviceps* by Ross. On those data, the specimen of Hakui Takamachi is a *K. simus*. Shirakihara *et al.*, (1987) described two *K. simus* found stranded on the Japanese coasts and they also identified the Hakui Takamachi specimen as a *K. simus*.

On 11 August, another male specimen was reported at Katsura nachi Key, near Taiji in Wakayama Prefecture. This individual was caught by fishermen and died 8 hours after capture. The measurements were taken by the staff of Taiji Whales Museum (see Table 1). The data obtained concerning the different measurements of the head (10.4%, 20.8% and 8.8%) on this specimen are similar to the average calculated by Ross on *K. simus*. The position of the dorsal fin is on the anterior part of the

**Table 1.** Measurements of two *Kogia simus* found stranded in Japanese coasts in 1984. Sp. N° 1: Hakui Takamachi specimen, Sp. N° 2: Katsura Nachi Key specimen

	Sp. N° 1		Sp. N° 2	
	cm	%	cm	%
Total length (tip of snout to notch of fluke)	262	100	192	100
Tip of snout to angle of gape	11	4.19	9	4.69
Tip of snout to centre of eye	21	8.01	20	10.42
Tip of snout to edge of flipper	39	14.8	40	20.83
Tip of snout to blowhole	20	7.63	17	8.85
Tip of snout to anterior edge of dorsal fin	107	40.8	85	44.27
Blowhole length	5	1.90	5	2.60
Length of eye	3	1.14	4	2.08
Centre of eye to external auditory meatus	7	2.67	—	—
Length of dorsal fin (anterior edge to posterior edge)	40	15.26	30	15.63
Height of dorsal fin	21	8.01	13	6.77
Length of flipper (anterior edge to tip)	42	16.03	28	14.58
Flipper width	14	5.34	10	5.21
Anterior edge of flipper to posterior edge of flipper	18	6.87	10	5.21
Flipper width	75	28.62	49	25.52
Fluke depth of notch	5	1.90	4	2.08

back (44.2% of total body length). Its height is greater than 5% (6.77%) and longer (15.6%) than in *K. breviceps*. The specimen caught by the fishermen near Taiji is certainly a *K. simus*.

### Discussion

The number of teeth help to identify the species in *Kogia* and this is a good criterion in separating the 2 species. Odell suggests that the external characteristics (e.g. dorsal fin size and location) are too variable for positive identification of intermediate size animals; tooth count is the best criterion to distinguish the two species (personal communication, 1988). *K. breviceps* has 12–16 pairs of teeth (rarely 10 or 11) in the lower jaw (Handley, 1966). At this time, no specimen of *K. breviceps* has been recorded with teeth in the upper jaw. On 8 specimens of *K. breviceps* from South Africa, Ross (1979) counted between 12 and 16 alveoli on the lower jaw with an average of 13.6 alveoli. In *K. simus*, the lower jaw has 8–11 pairs of teeth (rarely 13). On 16 specimens studied by Ross, the number of alveoli is from 7 to 12 with an average of 9.7 in the lower jaw. Unlike *K. breviceps*, *K. simus* has few pairs of teeth in the upper jaw; Handley reports 1–3 pairs or none. On the 14 specimens examined by Ross, only 4 had teeth in the upper jaw and the number was not necessarily the same on each side of the upper jaw (left/right : 0–1, 2–1, 2–2 and 3–3; Ross, 1979). The Hakui Takamachi specimen had 9 teeth on each side of the lower jaw and 1 tooth on each side of the upper jaw. Concerning the Katsura specimen, 8 teeth were implanted on each side of the

lower jaw and none on the upper jaw. The low number of teeth on the lower jaw and the presence of a pair of teeth in the upper jaw of one individual (Hakui Takamachi specimen) suggest that those two specimens are *K. simus*.

The presence of Kogiids in the Japanese waters is reported by many authors. Van Beneden & Gervais (1868–1879) described a whole skeleton of a '*Kogia du Japon*' which was later identified as *K. breviceps* (Omura & Takahashi, 1981). Other specimens of *K. breviceps* were cited in several data (Honda, 1928 with 1 specimen; Ogawa, 1936–37 with 3 specimens; Ogawa, 1939; Yamada, 1954 with 3 specimens; Harrison *et al.*, 1972 with 1 specimen; Omura & Takahashi, 1981 and Omura *et al.*, 1984 with two individuals). A female *K. breviceps* and her calf had been kept alive in 1978 in a Japanese oceanarium (Sylvestre, 1983). The cow and her calf were stranded together on the coast of Miura peninsula on 25 August 1978. The cow was returned to the sea, and the calf was kept alive in the Keikyū Aburatsubo Marine Park. A few hours later, the cow was caught in a net and taken to the marine park by fishermen. The calf was a male of 136 cm long and died the same day. The cow was kept 3 days in Keikyū Aburatsubo Marine Park and 10 more days in the Kamogawa Sea World. She died on 7 September, her length was 281 cm and her weight was 289.5 kg. The staff of Kamogawa Sea World noticed some red liquid faeces coming out of the cow's anus (Tobayama, personal communication, 1984). Two other individuals were recorded by M. Nakajima in Shizuoka Prefecture (Omura, personal communication, 1988). In 1968, a *K. breviceps* was kept alive in captivity for a few

days (between one week and 10 days—Nakajima, personal communication, 1984) in Bentenjima Aquarium, Shizuoka Prefecture (Nakajima, 1968 in Nakajima, 1970).

Concerning *K. simus* near the Japanese coasts, its presence seems not as rare as *K. breviceps*. Hirasaka (1936) has reported the stranding of a Kogiid at Ishigakijima in Okinawa Prefecture that he has described in a second article (Hirasaka, 1937) as being a *K. breviceps*. Several years later, Omura and Takahashi (1981) identified this specimen as being a *K. simus*. Adding the recent stranding of a *K. simus* in Okinawa Island reported in the present paper, we see that the waters of Okinawa Prefecture are sometimes visited by the dwarf sperm whale. Ogawa (1936–37 with 2 specimens), Yamada (1954, with 3 individuals from Taiji) and Harrison *et al.* (1972, with 3 individuals caught at Taiji in 1967) had recorded other specimens of *K. simus* in Japan.

The catch of *Kogia* in Japan is not rare, but not so common either. Their catch at Shiogama is rather limited, but at Taiji, it is annually constant; around ten out of several species of dolphins and porpoises (Yamada, 1954). Yamada (1954) received a letter from Dr. Remington Kellog, saying that he was surprised by so many acquisition of Kogiids in Japan. Kellog has suggested at the same time that Kogiids are more frequently occurring off the coast of Japan than anywhere else. This is not the opinion of many Japanese cetologists (Tobayama, personal communication, 1984).

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