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THE CAPTURE AND CARE OF *SOTALIA GUIANENSIS*

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Summary

Sotalia guianensis (P. J. van Beneden, 1864), the Guiana dolphin, was first recorded in 1863 as *Delphinus guianensis* in the Bulletin of the Royal Belgian Academy. It was formally presented as *D. guianensis* in 1864 (P. J. van Beneden, 1864). The source of the type specimen is not clearly known. It was thought to be a river dolphin from Surinam, British Guiana and Brazil and was clearly differentiated from *Sotalia brasiliensis* at that time (E. van Beneden, 1874). Details of its osteology, as compared with numerous other species of *Sotalia,* were described (van Beneden & Gervais, 1868) but the first measurements and photographs are from a specimen trapped in a fishing net in 1925 by Samuel H. Williams (Williams, 1928) at the junction of the Mazaruni and Cuyuni rivers, near Kartabo, British Guiana (58°42'W, 6°23'N).
A recent review (Rice & Scheffer, 1968) recognises only *S. fluviatilis,* from the Amazon river, and *S. guianensis* in coastal waters and the lower reaches of the rivers of northern South America from Lake Maracaibo to Rio de Janeiro, and possibly the Orinoco river. The maximum length of *S. guianensis* has been designated as 1.7 metres (Leatherwood et.al., 1976).
It would appear that, until now, very few specimens have been handled and very little is known of this species; certainly none appear to have been maintained in captivity.

Recent findings

We have observed *Sotalia guianensis* along the Caribbean coast from Panama to Venezuela, but catching was only possible in Colombia where permits were available. The largest schools of these dolphins were seen near the mouth of the Magdalena river, near Barranquilla, Colombia. For one month, an estimated 100 to 400 animals were observed playing and feeding each day. They tended to remain at sea in an area 100 to 2000 m from the river mouth, but 5 or 6 were regularly seen up to 600 m up the river. This pattern did not vary with the state of the sea. Local fishermen recalled that this behaviour had never changed within their memory and stated that they had never attempted to catch any dolphins, for superstitious reasons. In fact, it was difficult to

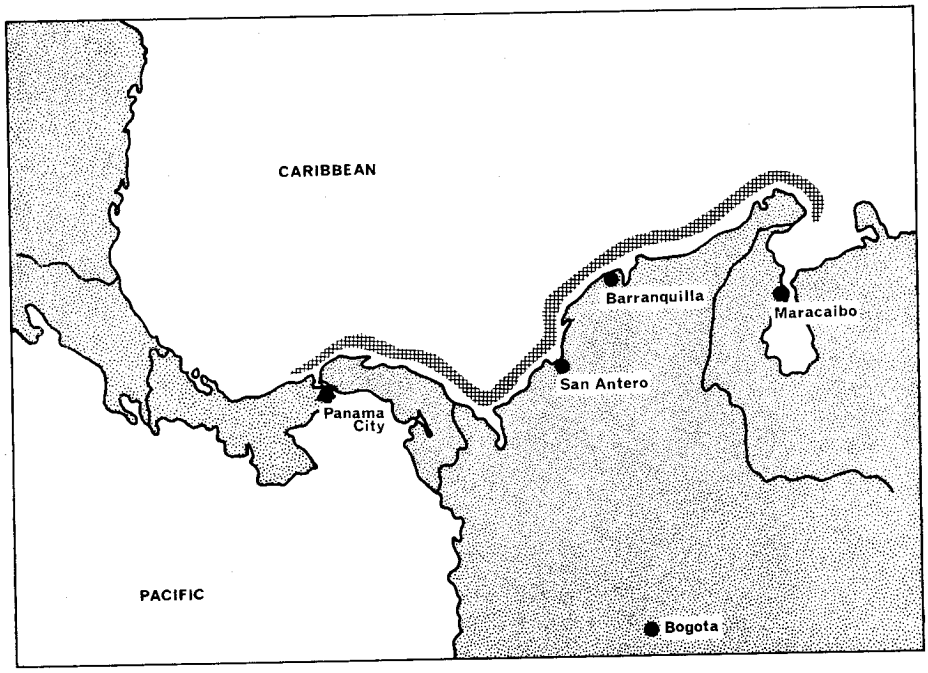

Fig. 1. Area where *Sotalia* was caught.

persuade local people to help in catching for this reason. The Magdalena estuary proved unsuitable for catching because of water depths to 30 m and the presence of many big sharks attracted by the pollution.

In January 1977 a site was located close to San Antero in the province of Cordoba, Colombia (75°40'W, 9°25'N). Local fishermen reported dolphins feeding each day in a big bay — Golfo de Cispata — 5 km from this village. The bay is about 5 km by 3 km wide and the water is between 0.6 and 3 m deep. Surface water temperature varied from 24 - 31°C and pH from 6.8 to 8.6 depending on the weather. Salinity was slightly lower than the sea outside the bay. The sea had a surface temperature of 19 - 22°C and a pH of 7.2 to 8.0

After capturing a manatee *(Trichechus manatus)* (?) inland, for the Nuremburg Zoo, we set up a base on the beach of the Golfo de Cispata. The first male dolphin was caught immediately, and pools were constructed to hold the animals as quickly as possible. We received an offer of another dolphin from fishermen but it was dead on arrival. The dolphins were caught as indicated on the map. The capture net was made of soft nylon, 300 m long by 4 m deep, with a mesh of 8 cm squares, and it was hauled out by a 5 m aluminium boat with a 80 HP outboard motor. With this net we could surround up to 16 animals at one time. After the animals were selected from the netted group, they were carried in the boat to the holding pools.

Selection was made in the water on the basis of an examination of length, sex, state of the teeth, colour and condition of the skin, tongue, eyes, blowhole etc. Further selection was made in the holding pools on the basis of a first blood sample. Without any normal values for this species, selection was made on the basis of *Tursiops* known values, and

unsuitable animals were returned to the water. It became clear that the average white cell count of a newly caught *Sotalia* was slightly higher than for *Tursiops*.
Once in the holding pools, the animals were left for two days without food. However, we later found that this did not help in any way to get the animals feeding faster, and we found that they all had to be force-fed by hand for the first two or three days, regardless of how long they had been without food. To feed the animals they were held in the water by the flippers. A second man opened the jaws, steadying the head against his hip, at the same time blowing a whistle. The third man then passed the fish gently into the dolphin's throat. By the second day, most animals opened their mouth voluntarily in response to the whistle. Later, animals were fed from the first day to avoid weight loss and weakness. Initially 2 kg fish was fed daily and this was gradually increased to 4 kg. A multivitamin tablet, iron and 500 mg thiamine were given in the morning in ½ kg of fish, and the rest of the food was given as three feeds through the day. The fish was bought locally from the fisherman and fed fresh as there was no power for freezers. We dit not attempt to feed shrimp or squid and we found that the dolphins did not seem to like herring, or any type of fish with spines or hard fins. About nine days after the first feeding of newly caught animals, one man could feed all the dolphins working alone.
The numbers of animals seen in the bay varied from groups of 2 to 25. In all we caught about 80 dolphins, of which 24 were selected for transport to Europe. The highest number held in the pools at one time was 17. At this stage there were 6 casualties out of the 80 animals handled.

Transport to Europe

Groups of 4 to 8 animals were selected and blood tested about two weeks before a scheduled transport. They were held together in a special pool to become acclimatised as a group. The transport boxes were a standard size 180 by 50 by 55 cm. The stretchers were also standardised, as most of the animals shipped were similar lengths. The dolphins were starved on the day prior to shipment. They were prepared with lanolin/petroleum jelly for skin protection. The journey began with a 45 minute truck ride to a local naval base with a small, rough landing strip, thence by Douglas DC-3 freighter to Bogota, a three hour flight. From Bogota the dolphins travelled with two attendants by Boeing 707 freighter to Paris. The airline, Air France, then provided express trucks for the onward road journey to Antwerp Zoo. Most transports took about 36 hours pool to pool, but the last one was delayed an additional 18 hours in Bogota. The dolphins were cooled during the journey in the usual way with hand spreys. There were no losses in the transports. Only animals from 150 to 180 cm were transported, although we had caught animals between 60 and 188 cm. Of the 24 transported to Europe, three animals died within three weeks of arrival with lung problems, and one died after two months with severe hepatic degeneration of unknown cause. The remaining animals are healthy and well acclimatised.

General observations of Sotalia guianensis

Of the 6 animals lost during the capture operation, two were adult females and four were very young (3 male and one female). The two adults maesured 167 and 172 cm and both were drowned in the net along with male young. As the adults were both lactating, we presumed that they were the mothers of the infants, which measured about

65 cm and had no erupted teeth. It was clear from closer examination of some of the animals transported to Antwerp that animals of 150 to 160 cm were quite young, and so it seems likely that maturity may occur at 160 to 170 cm in this species. We later caught two mothers with live young and kept them for about 3 weeks. When one of the infants died, the others were released. We found no pregnant animals at this time and none of the animals in Europe have proved to be pregnant, suggesting that births may, if seasonal, take place during the winter months. About 15 of the dolphins which were freed after the first blood test refused to swim away from the pools, and some remained around for several days. Some of them would approach the man in the water with the whistle and would accept food. At all times, even during handling and transport, these animals were very quiet and calm. They do not fight, as for example when taking blood, nor do they exhibit signs of fear or stress. Only one animal fought during transport. causing such damage to its tail that it developed a severe vascular thrombosis and generalised infection and died.

The animals were all easy to feed once they had taken the first fish, but we continued force-feeding if we could not be sure that each animal was taking its full ration. Groups of animals became very playful at feeding times. We attempted basic training with only two animals. 'Sinbad' was trained quite easily to retrieve a plastic ball and return it to the trainer, although he could become confused if the trainer did not stand at the same place. 'Hercules' was able to take the ball and hand it back for a reward. Such training took about two weeks, but this was not intensive and was made difficult by the very cloudy and turbulent water in the pools and the bay.

Conclusions

In general, our observations have added some new knowledge about this species. We have established that its range extends far to the west of Lake Maracaibo and northwards up the Caribbean coast to Panama. We have established a size range of from 60 to 188 cm, and have suggested that maturity may occur around 160 to 170 cm. Certainly females of 167 cm can be in lactation. It is hoped that further studies on the captive animals will establish more information on their behaviour and physiology, vision and sonar capabilities and, should any be lost, good anatomical data. We have seen that this species is very easy to handle and that, although nervous in the water, can adapt well to captivity given time, making it very suitable for display.

Our observations suggest that this species is plentiful in the coastal waters of north-eastern South America, but it is to be hoped that someone will be able to make a fuller investigation of its status and habits in the wild.

Acknowledgements

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SOME INFLUENCES ON THE VOCAL ACTIVITY OF HARP SEALS *(PAGOPHILUS GROENLANDICUS)*

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Abstract

Harp seals have a distinct underwater vocabulary during the breeding season. The animal appears close to mute for the remainder of the year. Attempts were made to monitor the change of call pattern over the period 77 03 06 to 77 03 16. An artifact, a sealing vessel, produced changes in recordings. Suggestions are made as to the possible significance of man-made noises on the harp seal.

Introduction

An examination of harp seal *(P. groenlandicus)* underwater vocalization patterns in 1975 (Terhune and Ronald 1976) indicated that the seals are vocally active all night and less active at daybreak and in the early afternoon. This study was continued in the Gulf of St. Lawrence during March of 1977. A few days after the recording equipment had been deployed, a 'sealing' vessel, the Nadine, a 36.5 m steel stern trawler, entered the area (on 77 03 09) accompanied by an ice breaker, which subsequently left, leaving the Nadine within 2 km of the apparatus. This unplanned presence of the Nadine precluded a full determination of the normal daily or monthly vocal behavioural patterns. A change in the night-time calls which has been noted may have been a direct result of the presence of the vessel.