A BRIEF REPORT ON THE BEHAVIOR OF COMMERSON'S DOLPHIN, *CEPHALORHYNCHUS COMMERSONII*, IN PATAGONIAN SHORES

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ABSTRACT

Data on the behavior and movements of Commerson's dolphins at Comodoro Rivadavia's harbor were collected as a preliminary step to future studies on this cetacean. Evidence on prey-species, calving season and ecological preferences are also given in this general account on what is actually known about the natural history of *Cephalorhynchus commersonii* and its position in the harbor's summer community.

Commerson's dolphin, also known as "Tonina Overa" because of its black and white coloration, is a cetacean of about 1.70 m long and very common in the southwestern Atlantic south of 42°S.

It is also frequent in Chilean waters south of 50°S to Drake passage (Aguayo and Torres, 1967; Aguayo, 1975). Strange (1972) and Hamilton (1952) comment its abundance in Malvinas islands and, finally, Angot (1954) reported this species for Kerguelen islands.

This report, although short is considered of relative importance because it gives some general new data for this cetacean as well as for imply considerations that I hope will be of interest for future studies.

Observations were made in the harbor of Comodoro Rivadavia (45°52′S; 67°29′W), Chubut province mostly at the end of the southern pier (Fig. 1) or from the top of the cliffs that lay just in front of the pebble beach of the harbor.

During most of the time it was possible to track dolphins with the unaided eye but sometimes 8×30 binoculars were necessary.

A Heuler stopwatch with an error of 0.2 sec. was used to clock breathing times, and notes were tape recorded or written directly.

Dolphins were tracked during 145 hours in January 1977 and January-February 1980.

The harbor of Comodoro Rivadavia has a mean depth of 5 m and its waters, although of relatively small volume, contain a high number of species in a moderately populated community at least during part of spring and summer.

Most abundant are schools of gregarious fishes such as silversides (*Basilichthys* sp.), Fueguian sardine (*Sprattus fueguensis*) and southern anchovy (*Engraulis anchoita*) all of which are the prey of dolphins, terns (*Sterna* aff. *hirundinacea*), Magellanic penguins (*Spheniscus magellanicus*) and shags (*Phalacrocorax albiventer*).

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There are great kelp beds, especially near the northern pier where Commerson's dolphin appears to be most of the time.

Tidal difference in the area is of about 4–5 m and nothing is known about how this might influence the movements of dolphins. Another disturbance for the cetaceans are long lasting oil patches left in the harbor by tankers and other ships.

Commerson's dolphin usually swims at moderate speeds, about 6–7 knots. When feeding they reach higher speeds and perform several kinds of breaches.

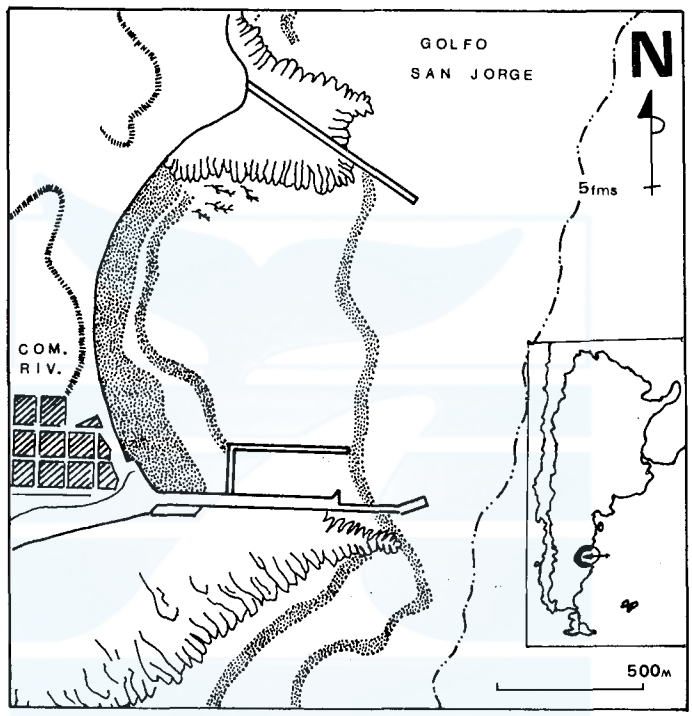

Fig. 1. General view of the harbor area of Comodoro Rivadavia, and its position in Argentine shores.

Generally, movements of this species seem similar to those described by Moreno (1892) who named it *Lagenorhynchus floweri*. From the end of the southern pier it was possible to track with detail this cetacean's slow breathing movements, which are altered when the animal swims at higher speeds, which it frequently does. *C. commersonii* surfaces at an angle of 45°, the tip of the snout first, and then it bends the head backwards, breathes, and then goes underwater with the body curved so that immediately after each breath the dorsal fin is above water, then the animal submerges and the flukes do not come out of the water.

Tracking Commerson's dolphin is very difficult for they usually remain submerged for 15–20 seconds, during which time they swim in a very erratic course, so it is not easy to tell where they will emerge.

From the top of the cliffs dolphins can be seen swimming at a depth of 1 or

1.5 meters, rarely in straight line.

Dolphins were seen in the harbor every day, mainly at the northern pier and the kelp beds. They usually search for fish, two or three meters from shore, and the same distance from the end of the southern pier, where they have been seen at only half a meter when pursuing a school of fish together with Magellanic penguins. These animals also jump very often, making all kinds of breaches. During field studies in 1980 we saw few of them but in the previous season the maximum recorded was 65–70 breathes made by 6 dolphins in only 17 minutes on 9 January 1977 (1317 hs, local time).

In general, a group of Commerson's dolphins breathes two or three times and then they all submerge almost at the same time.

The range of 93 breathing times recorded for several adult dolphins ran from 1 sec. to 1 min. 37 sec. ($\bar{x}$: 14.2 sec, SD: 18, 1 sec.) and 54 for calves: from 1 sec. to 48 sec. ($\bar{x}$: 12, 6 sec, SD: 11, 6 sec.).

We recorded 52 interbreathing times from a captive pair of adult dolphins for several days in an artificial pool which extended from 3 sec. to 23 sec. with a mean of 14.8 sec and a standard deviation of 15.1 sec, six hours after their capture, which is in accordance with breathing times recorded in free-living animals. The simultaneous inmersions of both cetaceans, and the almost imperceptible difference between them when this was not the case, was also seen in the pool.

Inhalation follows exhalation without an intertime. The spout is not visible even at close range.

Cephalorhynchus commersonii usually swims in groups of 2 to 4 animals although schools of 6–7 animals are seen. The greatest group sighted in the harbor of Comodoro Rivadavia was one of about 20 adult dolphins and 11 calves on 25 January 1977 (1500 hs, local time). They also congregate in higher numbers when swimming at the bow of a ship.

This schooling behavior is similar with that described by Baker (1978) for *Cephalorhynchus hectori* in New Zealand waters, and mainly by Aguayo (1975) for *C. commersonii*.

The dolphins are often in several groups of three or four that move as independent unities for a long time. We cannot say if these groups form part of a larger stock.

Almost nothing is known about the social behavior of this species. On the side of an adult male 1.58 m long captured on February 1980, we found scars distributed in three series; they appear to have been made by another animals of the same species. This could be the result of "social fighting", probably for females as suggested by McCann (1974).

Cases of "social facilitation" were seen: several dolphins begin to breach, being followed after few minutes by other animals.

When some Commerson's dolphins were carefully caught for a German zoo, we could see that other dolphins began to swim slowly near the captive ones. Acoustic distress signals from those entangled in the net might have attracted the others. We saw this every time when we succeeded in netting a dolphin.

It is interesting that no dolphins tried to evade the net by jumping over it. Every time they seek an exit, they do so underwater, never at the surface. Being adapted to the aquatic environmet, it is proper that when they feel danger they look for safety in the water where they can use echolocation. This case is similar to that of the Pacific tuna-porpoise problem in which *Stenella* species almost never escape from the net by breaching over it.

Rather frequently the bibliography mentions several species of cetaceans swimming together with pinnipeds, sea birds etc, but few if any of these references describe *interspecific relations* between them.

Commerson's dolphins although seen almost every day in the company of Magellanic penguins, terns and shags, never seemed to interact with these species. For example, on 11 February 1976, during field studies carried out at the San José gulf I sighted a lonely Commerson's dolphin swimming a hundred meters from a school of three Burmeister's porpoises, *Phocoena spinipinnis*, without noticing any kind of mutual interest (Würsig *et al.*, 1977).

At Comodoro Rivadavia, *Cephalorhynchus commersonii* usually swims close to terns, southern sea lions and Magellanic penguins, but we never could detect interspecific activity. Also, we did not see collaboration between terns and the dolphins in the capture of schooling fishes as was described by Würsig and Würsig (1979) in dusky dolphins, *Lagenorhynchus obscurus* and sea birds at the San José gulf, where they feed on southern anchovies, *Engraulis anchoita*. A probable explanation of this would be that in the San Jose gulf dolphins and birds need to "drive" fishes in a compact mass to be able to feed efficiently on them, because of the extension of the gulf. Commerson's dolphins and their prey species live during summer in a relatively restricted area of shallow water where there is no need such collaboration. This would not be the case in southern, more open waters, where something similar to the situation reported by Würsig and Würsig (op. cit.) may occur.

Little data was gathered on the ecology of *C. commersonii*.

Harmer (1922) reported krill and squids from a single animal from Puerto Stanley, Malvinas islands. Although we did not record stomach contents, from the behavior of dolphins and the capture of several hundreds of Fueguian sardines (*Sprattus fueguensis*) after the dolphins feeding activity, we conclude that this fish, probably together with silversides and southern anchovies, are the prey-species of the Commerson's dolphins in the San Jorge gulf, at least during spring and summer. The distribution of *S. fueguensis*, on the other hand, is exactly the same as that of the cetaceans (López, 1963).

Dolphins congregate in protected areas such as Comodoro Rivadavia harbor, the Ria Deseado (Santa Cruz province) and Rio Gallegos (Santa Cruz). We suppose that, as baleen whales do, they look for quiet and protected areas for calving. Dolphins are seldom seen in wide beaches as, for example, Rada Tilly south of Comodoro Rivadavia and Bahia Solano, north of it, nor are sea birds and sea lions. They might prefer harbor waters because there it would be easier to feed on schooling fishes where it is not neccesary to drive them, as was said above.

We never saw dolphins feeding at the center of the harbor, only close to the

beach and piers. Würsig and Würsig (1979) reported the way *Lagenorhynchus obscurus* feed on *E. anchoita* at the sea surface, using it as a "wall" to which fishes are confined. It is very probable that Commerson's dolphins at Comodoro Rivadavia use the beach and piers in the same way as dusky dolphins utilize the sea surface. In the case of *L. obscurus*, generally several tens of animals drive the fishes, together with sea birds; but this does not happen with *C. commersonii*, usually not more than ten animals feed at a given time.

Commerson's dolphins spend much time swimming in kelp beds, this has been reported also by Harmer (1922) for Malvinas islands. If the cetaceans profit from this, we do not know.

Goodall (1978) reported the capture of two pregnant females on the first days of December, 1977, one of which calf was born on the beach. Another animal (RNP 634) with a near term foetus was captured on 12 December 1977.

In Comodoro Rivadavia's harbor, at the middle of January we begun to see calves with the adults. The newborn calf is completely brown, as it grows it becomes greyish and then the black and white areas begin to appear, being at first gray instead of white and darker where it will be black. At the middle of February 1980, we still see calves. A census made on 28 January on the whole harbor area, showed a minimum of 18 dolphins, two of which were calves, one of them very small. This means an adult-calf ratio of 8: 1. A similar census carried out on 25 January 1977 showed a minimum of 50 adults and 11 calves, with a ratio of 4.5: 1.

Goodall (1978) reported 105 animals of her own from Tierra del Fuego, collected mainly between 1974 and 1978, which means a mean stranding of 21 animals per year. Mitchell (1975) mentioned a report made by James G. Mead on this species in Patagonian shores in which the author suspected an annual mortality of near 100 cetaceans in the whole coast.

We have no way of knowing the exact number of animals entangled in fishermen's nets for the moment, so this is the only source of information we have on the matter at present.

Commerson's dolphin is one of most common cetaceans in Patagonian shores. The first impression we got is that it appears to occupy a very similar ecologic niche as *Lagenorhynchus obscurus* north of the San Jose gulf, both animals preying on schooling fish. If these cetaceans intermingle on Argentine shores is something we hope to study in the future.

The calving season takes place in early summer, and it appears that dolphins prefer quiet areas, although sometimes they are seen in more open waters. This could be because calves need special water conditions and there might be a preference by adult dolphins for areas in which is easier for them to feed.

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