

PRE- AND POSTNATAL BEHAVIOUR IN THE MANATEE (*TRICHECHUS MANATUS*)
IN CAPTIVITY.

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Introduction

The birth of a manatee in captivity is still unusual. A few cases have been reported from the Southern United States (ANONYMUS, 1963), regarding births in females that were pregnant at the time of capture.

A young which was conceived in captivity was born in Miami in 1935 (BARBOUR, 1937). Again in Miami a couple of manatees, which had lived in captivity for many years, gave birth to a young in 1975 (CLARK, 1976). Unfortunately, no more than a five-line comment was published on this case. By personal communication we were informed that the female, known to be pregnant, lived in a pool together with two or three males. No changes were made, in order to avoid any disturbance. The actual birth escaped observation and the baby grew up without problems. No data on weight or dimensions were collected.

Probably another case of birth of a manatee in captivity has occurred in former years. In 1927 the gestation period of the manatee was mentioned to be 365 days. It can not be traced how the author arrived at this figure, which appeared to be correct.

The observations described in this paper were made on a female, captured in Guyana in 1972 and a male, captured in Surinam in 1966 (DEKKER, 1974). The animals shared the same tank since the arrival of the female.

Prenatal period

At the time of arrival, September 1972, the female was shorter and thinner than the male, a difference that became smaller over the years, an indication perhaps that the female was fairly young when she arrived. The male was probably already fully matured. At least since its arrival in October 1966 he had not grown. He was then and is now 2.70 m long. The female grew from 2.60 m to 2.78 m.

For four years the manatees did not pay much attention to one another, not even at the time that the female was placed in the tank with the male. Before then the latter had lived in the tank as a bachelor. On the other hand the animals were not unfriendly towards each other.

During the first week of August 1976 several people reported a behaviour which had not previously been observed. The male tried to grab the female with his flippers and at the same time an erection of the sexual organ was observed, which normally is kept internally. In the female, for approximately two weeks, swelling of the genitalia was evident. Actual mating was not observed, however. On August 7th the caretakers noticed something that looked like an attempt to copulate, but a good observation was impossible because of the cloudy water. It is possible that copulation did take place during this period, because in addition to an increase in size of the female during the month of May 1977, also a distinct swelling appeared in the area of the genital pore. Thickening in this area is a sign in many mammals of impending birth or the beginning of estrus and mating period.

The female became very hungry, she ate so quickly and so much that the male hardly received his share and became visibly thinner. Therefore the male was temporarily separated from the female to allow him to consume his lettuce and endive fully. Within a few weeks he recovered. He did not overtake the female, however. She surpassed him in circumference, which had never been the case before.

One morning the caretaker brought the message that he had observed "life". Indeed the female

showed from time to time distinct undulating movements from the umbilicus to the tail. The daily reports noted for days on end the singular message: "Movement seen in the sea cow". The days became weeks, the messages scarcer and finally it was only a single note once a week: "sea cow unchanged".

Towards the end of July a distinct change had occurred in the course of the abdominal line of the female. The thickness had changed location towards the tail, which caused a kink in the contour of the abdomen. The genital pore remained quite swollen, and the undulating movements in the abdominal walls were visible from time to time.



Fig. 1 Abdomen 10 days before partition.

Postnatal period

When we arrived at the tank in the morning of August 8th 1977, we saw a very lively young sea calf next to the mother, just behind her left front limb. A very small animal certainly in comparison to the colossal body of the female. In a perfect natural movement the young animal breathed, the snout just above the surface of the water, the nostrils open for a few seconds, then closure and diving.

The female had not changed very much. She was not appreciably less thick in size. The genital organs were still quite swollen and the nipples behind the armpits had the same shape as before the birth. There was no evidence of breast formation, which should take place according to fisherman in Surinam. Also during the following weeks there was no development of distinct breasts. Obviously, this was not necessary, because the young developed well and was apparently able to get sufficient nutrition from its mother.

At the morning of the birth the water in the tank was just as green as every other morning after a night during which approximately 50 kg of vegetables is consumed. There was no evidence of red discoloration as a result of blood loss. It was difficult to see what was happening in the cloudy water. Therefore it was decided to drain the tank as is normally done in the morning, to

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refill it and possibly keep the water running to keep it as clear as possible. When the tank was almost empty the female became extremely restless. In her excitement she began to push the young away in a rough manner. At any moment we expected the young to be crushed or heavily bruised between the female and the walls of the tank. We immediately stopped the draining of the tank and with the aid of several hoses as much water as possible was run into the tank. Peace returned fairly quickly, without any apparent ill effects. It was clear that the female reacted more nervously to the events that in the past had been normal daily routines. For instance, an attempt to remove the lid of the tank in its place with the aid of a long stick was also reason for panic, as were the careful attempts to clean the windows under water with a brush on a long stick.



Fig. 2 Nursing 1 week after birth.

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According to literature the young should be pink, swim with the front limbs and have teeth in the upper jaw. In our case it appeared that the roly-poly young was dark gray to black, much darker than the mother. It had conspicuous thick folds around the base of the tail and neck. During a short swimming exercise it could be seen that already that first day it used its tail to propel itself. We were unable to discover teeth, in spite of the fact that the animal frequently swam in front of the window and touched the glass with a rubberlike snout, or in spite of the fact that it grabbed a nipple of the female right in front of the window.

Conspicuous that first day was the layer of fat on the skin of the young. Also the water was covered with a fine film of fat. Every time the little one appeared above the water surface with part of its body, the water rolled off its skin in fat droplets. This effect had completely gone the next day.

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Mother and child stayed primarily in a dark corner of the tank during the first day, the young did not leave her side. The latter breathed more frequently than the female, though sometimes they surfaced almost simultaneously. Their noses reached the surface a fraction of a second after one another, sometimes the female first, sometimes the little one. During periods of rest the young usually stayed under water for over a minute, sometimes for over two minutes. At ten

o'clock in the morning of the date of birth the chronometer even recorded two minutes and 27 seconds.

During a round of swimming the intervals were shorter. The calf stayed under water for 15 to 30 seconds during these exercises, just like during periods when both animals were actively moving in the resting corner.

During the course of the week the intervals gradually became longer and the young was able to stay under water for 3 or 4 minutes by the end of the week. With time, the respiration rate became more synchronous with that of the mother. Finally both animals came to the surface simultaneously and, in unison, they disappeared after the lungs had been filled with fresh air.

The first morning, after the tank was filled with clear, warm water of 30°C, we saw the first attempts at feeding. The search for food occurred from the first moment at the right place: the axilla of the front limbs, where the large nipples are located.

In suckling the young pushed its snout with gusto on the intended spot and on that moment the female became rigid in her motions, turned slightly to one side and brought her front flipper forward alongside the head, to make the nipple more accessible. Then the young nursed quietly for one to two minutes. Although this was the first offspring of the female, the milk production was apparently all right. The young remained quite lively and well filled and once milk was observed to flow from the nipple. We could say that the female acquitted herself of her task in excellent order. She was very careful and gave the young opportunity to nurse even during the times she was feeding herself. Thus we noted the female rigid under water, lying on her side with the young on her nipple and with a large head of andive in her mouth. Only when the little one stopped suckling did she continue to eat.

If the young nursed on one nipple too many times, then the mother moved it with the aid of her forelimbs to the other side, once even over the top of her head. She manoeuvred the little one on many occasions. Once, when I moved quickly to the window, she seized the little one with both front limbs and pushed it backwards under her abdomen. Also, when a caretaker tried to remove something from the water with a stick, the young was pushed out of the way.

At sleep, the young floated motionless in the water, upside down, with curved head and tail and closed eyes, apparently a normal sleeping position. Often the animal cavorted for a short time after this and was quite lively and playful in the water, rolling around its axis or tumbling head over heels. The first few days this happened always in the immediate vicinity of its mother, but after a month it played in the entire tank. The tie between mother and child was quite close in the beginning but gradually became looser.

A curious and frightful experience for the spectator is the fear response of the young sea calf. Once the male, on turning around, hit the surface of the water with the tail. The frightened young, which was a few days old at the time, spurted through the tank away from the mother. With a few strokes of the tail it reached top speed and crashed painfully into the wall of the tank. The female did not seem to be frightened, but immediately followed her child.

When the young was about two weeks of age the separating gate was removed to enable the farther to join his family. Again the young showed a wild flight reaction. The mother hardly reacted to the removal of the gate, nor to the panic of her child. From the part of the male the first acquaintance took place quite quietly. He calmly glided into the tank with the mother and child and explored the entire space, occasionally meeting the calf and sliding over it with an arched back. He then returned to his own part of the tank and fell asleep.

Initially the mother tended to place herself between the child and its father. Gradually the relations became more relaxed. Male and female reacted entirely calm and practically disinterested in their reunion. Probably under normal circumstances it is not necessary to separate the animals before the birth of a young. In our situation the nutritional condition of the male made separation desirable.

The manatees are fed in the afternoon, lettuce and endive being the main source of food. The first few days after birth the female was obviously less hungry. She soon returned to a daily consumption of some 25 kg of vegetables.

The young participated from the very first day in grasping the vegetables with the very movable

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snout. The heads of lettuce were touched and nibbled, but were not eaten.

We did not dare to touch the young for the first few weeks because of the nervous behaviour of the mother. The first time it was actually measured was when the male was admitted to the family tank. At that time the little one was 16 days old and measured 104 cm. The measurements and weights collected after that time are listed in Table I. We estimate that at the time of birth on the 8th of August it was less than 1 m long.

The young manatee is a male, nearly three years old now, and has meanwhile grown to a length of about 2½m. Suckling can still be observed now and again.

Table I. Length and weight of a male manatee, born 8/8 1977.

Date	total length	weight
24/8 '77	104 cm	—
6/9	111 cm	28kg
19/9	115 cm	31 kg
26/9	118 cm	34 kg
2/10	—	36 kg
10/10	130 cm	41 kg
16/10	134 cm	46 kg
23/10	136 cm	50 kg
12/12	142 cm	
10/4 '78	169 cm	
21/6	185 cm	
4/9	187 cm	

References

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