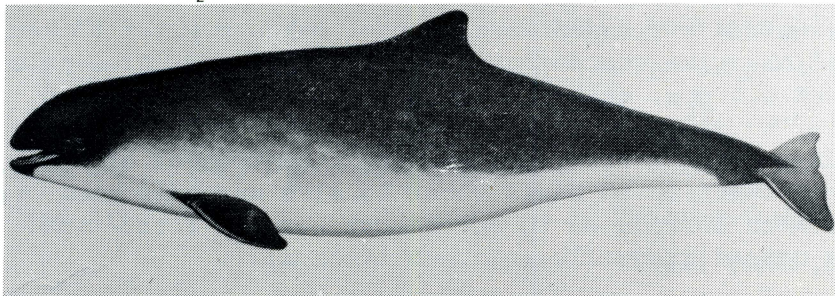


THE REARING OF SUCKLING HARBOUR PORPOISES (*Phocoena phocoena*)

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Fig. 1. *Phocoena phocoena*.



Summary

The rearing of unweaned dolphins has hitherto not been described in literature. In 1973 our laboratory received 2 juvenile harbour porpoises (*Phocoena phocoena*) and we succeeded in rearing them on chopped herring, water and vitamins. At the time of writing, September 1974, the animals are in good condition and have adapted well to the captive environment.

Materials and methods

Catching: Both animals had trapped themselves in pond nets in which the animals are only enclosed in a wide circular net, closed at the bottom but open upwards (ANDERSEN, 1974 and DUDOK VAN HEEL, 1962). In each case fishermen had noted an adult animal swimming outside the nets the previous day, but it had in both cases left before we arrived. The animals data are seen from Table I.

TABLE I: The animals data

Name	Sex	Date of arrival	Weight Kg.	Length cm.	Estimated age months
Miss Jensen	female	Aug. 24, 1973	17.1	95	2
Reiner	male	Oct. 27, 1973	17.4	98	4

Transportation: Both animals were transported to the laboratory in a standard porpoise sling in a closed van. Transportation time was 1 and 1½ hours, respectively, and were trouble free.

Holding facilities: Our quarantine basin 4 x 3½ x 1 metre with chlorinated, artificial saltwater was used. The basin had a separate water circulation and the heavy and longlasting load on the water required a frequent addition of make-up water to keep the combined chlorine concentration about 3 - 4 ppm. Free chlorine was about 0,1 ppm, salinity about 15 0/00 and pH about 8.

A few days after arrival the skin started to peel off both animals. This reaction to basin water is also normally seen in adult animals when introduced to our basins for the first time. The peeling ceased gradually in about 14 days.

Food and its preparation: Since 2 earlier attempts to rear suckling harbour porpoises on double cream had proved unsuccessful we decided to prepare a mixture of chopped herrings, vitamins and water. By weight we used 4 parts of water and 3 parts of chopped herring. A multivitamin tablet was added in the mincer and 35 mg thiamine was added per Kg. herring to account for the activity of the thiaminase in the fish (GERACI, 1972). A large portion was prepared and deep frozen in plastic bags with 350 g. in each. Thawing was done immediately before each meal in lukewarm water and lasted for about 15 minutes.

Food administration: The mash was poured into a household cake icing set attached to a 15 mm horsestomach tube. The plunger was fixed vertically to the innerwall of the basin above water level and the animals were fed in the water. To prevent the animals from swallowing basin water their heads were slightly lifted out of the water and the tube was gently forced down along the palate and quickly passed beyond the point where the natural reflex of regurgitation is elicited. The tube was introduced some 30 cm. from the tip of the lower jaw. The piston of the plunger was pressed down slowly in 10 - 15 seconds. Fast emptying sometimes caused vomiting.

Distribution of meals: Since both animals were judged to be in the suckling period we decided to give many small feeds throughout the day. Table II lists the number and size of meals given to "Miss Jensen" and the kind of food. Tube feeding lasted 7 days and force feeding in the basin with small, i.e. 10 to 15 cm.

TABLE II: Feeding schedule for the female "Miss Jensen"

Period	No. of meals:	Size of meals gr.	Kind of food	Way of feeding
1st day	1	200	herring mash	tube feeding
2-7th day	6 - 8	200	herring mash	tube feeding
8-22nd day	6 - 7	200 - 250	small herring	force feeding
23-53rd day	4 - 5	300 - 500	small herring	force feeding
54-68th day	3	700 - 800	herring	force feeding
69-73rd day	3	500	herring	force feeding
hereafter	3	800 - 1000	herring	hand feeding

long herrings lasted 60 days. In order to force her to eat by herself we reduced her food intake for the next five days. At the end of this five day period she began eating normally at the feeding station.

We can only emphasize that taking in a suckling porpoise requires one man on a full time job. It also requires suitable basins where the animal can easily be caught and fed while the assistant is in the water. In the case with Miss Jensen we had to catch her 3 to 8 times daily for about 2 months. The job was made easier the last month when the animal voluntarily came to the feeding corner when we jumped into the water.

Table III gives the feeding schedules for the male "Reiner". From this table it is seen, that between the 3rd and the 8th day the animal resisted both tube and force feeding to a degree that made it almost impossible to feed him. The animal was judged to be about 4 months old when caught and therefore we tried as soon as possible to begin with small herrings. This animal did not grow as fast as the female and is still at the time of writing the smaller of the two and the more nervous. Feeding in the basin lasted in this animal 1½ months.

Discussion

Our laboratory had tried twice to rear orphaned harbour porpoises on heavy cream; in both cases the animals died. They developed diarrhoea and the faeces looked like butter.

TABLE III: Feeding schedule for the male "Reiner"

Period	No. of meals	Size of meals gr.	Kind of food	Ways of feeding
1st day	0	0	-	-
2nd day	6	200	herring mash	tube feeding
3-4th day	irregular due to resistance and vomiting			tube feeding
5-8th day	irregular due to resistance and vomiting			force feeding
9-14th day	3 - 5	250 - 450	small herring	force feeding
15-45th day	3	800 - 1000	herring	force feeding
hereafter	3	800 - 1000	herring	hand feeding

Obviously, this was due to lactose-malabsorption as it is known that otarid seals lack lactase in their intestinal mucosal (KRETCHMER and SUNSHINE, 1967). There is only one analysis of the lactose content of harbour porpoise milk (PURDIE, 1884) that of 1.33% which is in the order of magnitude of the concentration in other cetaceans, about 1% (RIDGWAY, 1972). Cows milk contains some 4 times more.

Very little is known about the lactation period in the harbour porpoise. MØHL-HANSEN (1954) stated that they most likely suckle for at least 8 months. We have seen milk in the mammary glands of two adult porpoises 6 months after the breeding season and have found milk in the stomach of 3 juvenile porpoises about 6 months old. Our experiment with the two harbour porpoises has shown that they are able to take solid food at the age of about 2 to 4 months. This agrees well with the findings of SMITH and GASKIN (1974) where the smallest harbour porpoises investigated with fish remains in the first stomach had body lengths of 104, 109 and 113 cm. One of the orphaned young that was fed on heavy cream was together with an adult animal who was not lactating. The young one was begging for milk and at the same time emitting a characteristic sound. After having been fed the young was silent and the "begging sounds" increased in frequency towards the

feeding. This youngster was about 4 months old.

Both animals developed lungworm infestation after about 6 months and one of them was infected with tape worm. This disappointing fact is most likely caused by feeding herrings that have not been sufficiently frozen, or for the oldest one that he already in the wild had got them through the food. Nothing is known on the lifecycle of the lungworms.

Our records on growth will be published elsewhere, but readers should be referred to AMUNDIN (in prep.) for special features in their juvenile behaviour.

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