

are appreciated as well. But when one asks if there is any highlight that would encourage people to come back and again pay the entrance fee of €14.50, one comes to the inevitable conclusion – giant pandas.

The 26-ha Lisbon Zoo does not provide a lot of space for such a high number of more than 330 species, and especially for so many large mammals. We would love the zoo authorities to send at least the white rhinos away. Their housing in a tiny enclosure is just as miserable as the old bear enclosure, and two rhino species in a small zoo like Lisbon is really not necessary. (Unfortunately the zoo is currently waiting for a young female white rhino from South Africa.) To improve this will be the next project for the zoo in modernizing its animal housing. On the other hand, many new enclosures and some enlargements of existing exhibits show a general attempt to take a step into the modern zoo world and meet international standards. If the policy of displaying just everything rare and attractive can finally change to one of building up a carefully selected collection, the process of transformation into a modern zoo will be successful.

#### 14. Quinta Pedagógica dos Olivais. 1800 Lisboa ([www.cm-lisboa.pt](http://www.cm-lisboa.pt))

This farm dealing with animal and agricultural matters was created for educational purposes. Here school groups especially, but also some tourists and private families, can learn about life on a farm and enjoy the contact with live domestic animals. Traditional handicrafts are shown to interested visitors. After being reopened in January 2005, the farm is open all day during the week. An appointment is only necessary for groups.

[The concluding part of this article will be published in the next issue of *IZN*.]

*N.B. Readers who understand French may be interested to visit Jonas Livet's website at [www.leszoosdanslemonde.com](http://www.leszoosdanslemonde.com).*

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## DEVELOPMENT OF A RHINO ENCOUNTER AT AUDUBON ZOO

BY COURTNEY EPARVIER AND BILL SMITH

The Audubon Zoo (New Orleans, Louisiana, U.S.A.) currently houses four (2.2) southern white rhinos (*Ceratotherium simum simum*). The herd consists of a 14-year-old male named Saba, a 43-year-old female (Macite), a 15-year-old female (Yvonne), and the male calf of Saba and Yvonne, named Nane. Yvonne and Saba were brought to Audubon in 1993. They formed a friendship bond instead of a breeding bond. In 1998, Macite was brought in to teach the pair how to breed. After a few years of unsuccessful attempts by Saba, Macite finally taught him the correct way. After watching Macite and Saba, Yvonne understood what she needed to do. The pair successfully bred in 2002, and in September 2003 Yvonne gave birth to her first calf. The zoo had never had a rhino calf before, so his birth was very exciting. The zoo promoted Nane by having several tours available to staff and VIP guests. In the course of all these tours and constant attention being showered on the youngster, he became very 'people friendly'. At the same time Yvonne was very comfortable with large groups of guests coming by and meeting her calf and paying him lots of attention. Our Curator of Mammals at the time came up with an innovative idea that no other zoo had taken on, to allow our guests to actually touch a rhino as part of their visitor experience. He convinced the director and general curator to go ahead with this very exciting idea. The zoo was very committed to giving our guests a unique experience with the rhino encounter.

In March 2004 the construction of the contact area began on a site directly adjacent to the rhino exhibit. The hoofstock staff constructed a temporary fence made of bollards so that the rhinos could still be on exhibit while construction was ongoing. The actual construction only took seven weeks. Toward the end of the construction process, the hoofstock staff began working with Nane by rewarding him any time he came up near the area with tactile contact and some alfalfa. This process only went on for a week. By the time the construction was fully complete, he was very comfortable coming into this area. We began by opening one of the gates and luring him in with alfalfa. This method was successful the first time we tried. The process was repeated every day for a month, always leaving the gate open so he could go back on exhibit any time he chose. The gates of the area had removable metal bars on the tops so that he could come in, but not the adult females he shared the exhibit with.

After a month of the 'open gate' method, the decision was made to close the gate behind him. This was a tricky task considering he had never been separated from his mother before – at least, not by a large metal gate. The first three times we tried closing the gate behind him we were forced to immediately open it because he and his mother would use considerable force on it when it was closed. The hoofstock staff decided to concentrate on the two females on exhibit. Nane was comfortable with the gate being closed until he heard his mother calling for him at the gate. We began feeding the two females large amounts of alfalfa in

the exhibit after he was in the area with the gate closed. This method worked very well: the females were busy eating the alfalfa and Nane was enjoying the attention in the area. We began putting large piles of alfalfa at the front of the area so he would stay front and center for the guests to see. The staff began doing scheduled chats at the area – now named ‘the rhino encounter’ – at least four times a week. This lasted for a month, then we decided to move to the next step by letting our guests touch the young rhino.

The staff came up with a protocol for the rhino encounter. We decided that to make it a better experience for the guests we would limit how the actual crowd entered the area. A staff member was assigned to each gate at the front of the encounter. These people were expected to engage the guests with facts about the animals and to explain our training methods. We made one gate an entrance and the other an exit, causing the flow of people to go from left to right. Only four guests were allowed in at a time, and they were told not to touch his head for safety reasons. From the very beginning this method worked from the guests’ standpoint. The major obstacle we kept facing was that Nane would periodically decide he did not want to come into the area. This problem persisted for two months without a real solution being found, but after that he decided on his own to consistently start coming into the encounter area.



Zoo guests passing through the encounter area. (Photo: Courtney Eparvier)

After two months of the encounter going really well, Nane began having some health problems. The staff noticed he had consistent runny stools for two weeks. The diagnosis turned out to be a *Giardia* infection. This parasite is zoonotic,

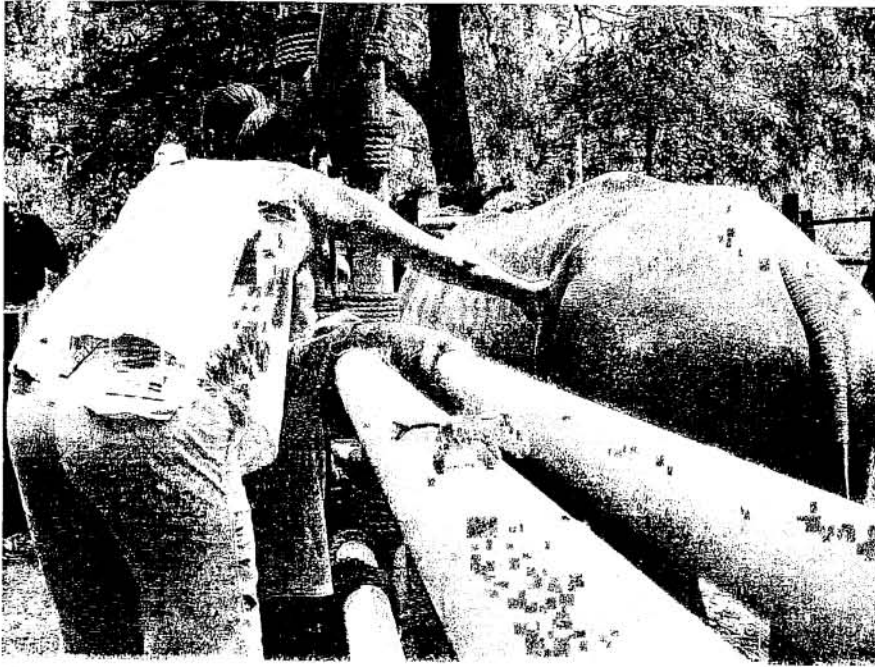
meaning that it could possibly be passed on to people, so the decision was made to stop the encounters and go back to a chat session. Nane was cleared of all symptoms after a month and then the all-clear was given to resume the encounters.

Things went well for about a month, and then we ran into our next obstacle. Nane started wanting to go back into the exhibit after only a few minutes in the encounter area. We tried baiting him with bananas to get him to come back to the front of the area for the guests, and this method worked for a few weeks, but the staff and the guests were getting increasingly frustrated with this ‘start and stop and start again’ routine.

The idea was suggested of bringing Yvonne into the encounter with him for ‘comfort’. The hoofstock staff decided to give it a try: after all, she had always been comfortable with guests touching her calf before. The first time we tried both animals in the encounter area was without any guest interaction, just to see how she would react to her new surroundings. Both animals seemed comfortable with the situation, neither showing any signs of distress. The next step was to continue the encounters but incorporating Yvonne. The first couple of encounters went fine – Nane stayed to the front and Yvonne seemed to enjoy all the attention from the staff. Eventually, however, she became increasingly nervous in the encounter area. She would wander around and kept sticking her horn through the bars at the guests. This was not an aggressive move, but as her horn is 22 inches [55 cm] long it became a safety concern. Our present Curator of Mammals, in conjunction with the hoofstock staff, decided it was time for a change.

A discussion took place about the fate of the rhino encounter and it was decided that the sea lion staff would be contacted to assist the hoofstock staff to make the encounter more structured. When the sea lion staff were brought in to help with rhino training, they saw many problems that they knew they could help solve. First of all, the rhinos were not fully accustomed to even basic target training, so we knew we would have to start with the basics. We also thought that the staff had been rushed and unprepared for the expectations of the encounter. They were also guilty of spoiling Nane. He ran the show for the encounter and the staff were letting him get away with anything. Nane was ending the training session when he decided to, and that needed to be addressed. Also, during the encounter, piles of food were put in front of the animals to keep them ‘occupied’ while visitors came to touch them. The rhinos were basically getting reinforced for moving around and breaking, instead of getting reinforced for targeting and holding the position. Nane was constantly breaking before the end of the encounter and Yvonne would frequently break and did not really have a purpose during the encounter. With these problems, we knew it was going to take time to correct the unacceptable behaviors. Our supervisors understood this and we were able to start from scratch and get the routine on track to where it needed to be.

One of the first obstacles that we needed to understand was, ‘what was reinforcing to white rhinos?’ After asking some other keepers and conducting some research, we found out that white rhinos prefer tactile contact. This was great since people would be able to touch Nane, but we believed a primary reinforcer that all the animals liked was a necessity. Our main food items turned out to be alfalfa, bananas, and alfalfa cubes. We tried some horse cookies, but the animals didn’t seem to like them. Just as with any animal, different items are more reinforcing for different individuals, so it was interesting to find out what each rhino’s preferences were. We found that the alfalfa cubes were a great way to reinforce quickly, and it was easier to keep them in a container than to carry a big handful of alfalfa around.



*Touching a rhino is a unique experience for zoo guests. (Photo: Courtney Eparvier)*

We believed that, with some consistency, these problems could be solved. First we concentrated on making targeting a firmly established behavior for all the rhinos, especially Nane. There would be no more piles of food put in front of the animals. They would target and get reinforced after the bridge (the word 'good') for staying on target and holding. We would approximate the length of time between behaviors and work towards longer periods of time. We decreased the amount of time for the encounter. This way, we would have an opportunity to end the session positively before Nane would break. It was also decided that Nane worked better with Yvonne in the encounter area for reassurance. We wanted to give Yvonne a purpose in the encounter area so we stationed her to one side, away from Nane. An additional hoofstock keeper would treat it as a training session with her, while Nane was worked close to the visitors.

All of the animals were consistently targeting and meeting the criteria for that behavior, but we did run into some problems. Nane was targeting very well, but seemed to get bored halfway through the encounter. This would lead him to break to Yvonne, which led Yvonne to break. Then we would take a timeout before attempting to target them back to their stations. (In animal training, a 'timeout' is an occasion when the trainer completely ignores an animal who has made an incorrect response – you walk away or turn your back for a certain amount of time, as a way to avoid reinforcing unwanted behavior.) An unexpected problem emerged when Yvonne would refuse to shift out to the exhibit from the encounter area when the session was over. There was obviously something more reinforcing in the encounter area than out on exhibit. She would graze about in the woodchips

and would always sharpen her horn on different surfaces in the area. Food motivation was not there, as we tried 'baiting' her out a few times. We would take a timeout away from the encounter area where she could not see us, but we could see her and our guests. It was not safe to leave her unattended due to her close proximity to the public area. This was a serious time constraint on the keepers. It would sometimes take 35–45 minutes to shift her out properly. Nane was good at shifting out after the session, and we made sure to reinforce him very well for that behavior. Then another problem surfaced. Nane started to pay attention to the open gate to the encounter area where his mother was, and would sometimes try get back in, treating it like a game.

We felt that, again, Yvonne needed a purpose out on exhibit to make it more reinforcing for her. We asked if there could possibly be a safe place on exhibit where we could create another area for the rhinos to go to for training or reinforcement from their keepers. A gate was installed for the keepers not too far from the encounter area, for the animals to go to after the session. This would give us an opportunity to work them a bit more and end the entire session on exhibit. It would be like an A→B, having the animal in one area or station and sending it to another station.

As for Nane breaking during the encounter, we decided to keep him on his toes by moving him around and making him think. We could keep him in one spot for a certain amount of time, and then have him move to another part of the encounter area. The biggest point was not to let him march you around, and for the trainer to be in control. This proved to us that he was really target-trained, and he seemed to enjoy the new scenery while our visitors touched him. When the gate was opened after a timeout to give Yvonne another chance to shift, we made sure we reinforced Nane very well for staying on exhibit instead of making it a game for him.

With this regimen in place we have been moving forward with the encounter. Nane does not break during the sessions. The number of timeouts needed for Yvonne to shift out has greatly decreased. Most importantly, the encounter has been consistently lasting for eight to ten minutes, with ten minutes as our goal for now.

There were some key elements in the development of this project. There should have been a better strategy from the beginning so that the expectations of the encounter were clear. With five hoofstock staff, communication was important to keep the training consistent. A helpful tool was documenting all training sessions, good or bad. The sea lion staff were instrumental in helping the hoofstock staff understand the basics of training. This training can be applied for husbandry behaviors for the entire herd. We have applied the same training to Macite and Saba during sessions in the rhino barn.

Our future goals for the encounter include being able to separate mother and calf comfortably so that Nane can be in the area by himself. Macite is a very tractable animal and would be a great candidate for the encounter. In summary, we would like to be able to shift any animal into the encounter area while another staff member is holding the other animals at station. The training with the rhinos has progressed well and we believe these goals will be met with time and consistency.

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