

**LA 042**

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LA 042 was a 259 cm long male *Tursiops truncatus*, weighing 217.5 KG. His age has not been determined yet. He was first found alive at about 3:30 PM 02/24/98, 1 mile east of Tides Inn RV park, Holly Beach, Cameron Parish, Louisiana. Bystanders had attempted to push him back into the water several times. He died about 6:00 PM, was recovered by the Network at 8:00 PM, and brought to Galveston, where necropsy was begun at 10:30 PM.

In general, he was in good condition, with many large well healed scars. On moving him, white foam ran out of the blowhole. The blubber was normally thick. One target-like ulcer was present on the left side of the body. There was a minor malocclusion of the teeth of the left side, with two teeth close together on the top spreading the opposite two teeth on the bottom. The teeth were worn simulating fracture. The mouth was extraordinarily difficult to open, suggesting tetanic contraction of the musculature.

Consistent with the very short (4-5 hours) post-mortem interval, he was very well preserved, with no evidence of gas formation. Pleural and peritoneal cavities contained minimal fluid. All membranes were normal.

The trachea and bronchi were full of white foam. Several small firm calcified nodules were identified in the lungs. These were typical of lung worm scars. A few nematodes were found in the airways, but infestation was judged to be very light. The heart had several small whitish areas indicating old scar in the left ventricle, and one in the right. As is usual with our dolphins, the heart valves, coronary arteries and aorta were all normal.

The stomach was empty. About a dozen *Braunina* were firmly attached to the mucosa of the third chamber. The fourth chamber (duodenal ampulla) was unremarkable. The remainder of the intestine was constricted, but showed no abnormality.

The liver was normal except for a small calcified nodule (3 mm) next to a bile duct. There was a large focus of chronic pancreatitis, which appeared to be an old process. The kidneys showed many small scars, which is unusual for our dolphins. The lymph nodes of the neck were quite large; together the nodes of the left side alone weighed as much as the spleen.

The brain was swollen. The surface features were flattened against the inside of the skull, and skull features were impressed on it.

It is our practice to culture blood drawn from the heart at the time of necropsy. In this animal, a pure culture of *Vibrio damsela* was recovered.

Comment:

This animal is a good example of a common problem. We can identify the final cause of death as heart failure, which can be explained by his being on the beach. There is no clear indication, however, of why this animal beached. The pancreatitis, which probably resulted from parasitism, is old, and he would have had it for months. We have a strong indication of bacteremia (bacteria growing in the blood), often called "blood poisoning". The brain is swollen, and the lymph nodes are enlarged. Brain swelling can be associated with confusion, impairment of consciousness, or loss of consciousness. This could easily have brought him to strand. Once on the beach, from whatever cause, a dolphin will inevitably die without human intervention. Since a dolphin cannot dump heat with its fin,

flippers, and flukes out of the water, body temperature rises quickly. The cetacean body is designed to function in a buoyant medium, and when not supported in water, the weight of the body tends to compress the chest, and the work of breathing rises to unsustainable levels. The result of overheating and chest compression is heart failure.

This animal seems to have become ill over a short time. The stomach was empty, suggesting that he had not eaten for a while, but there was no apparent weight loss, indicating that he had not been sick for long. The main physical finding of a swollen brain and large lymph nodes taken together with the finding of *V. damsela* in the blood suggests that we are dealing with an acute infectious process. The short post-mortem interval allows us to put a lot of weight on the finding of bacteria in the blood. If he had been beginning to bloat, we would have not placed much meaning on it. Also, this particular bacterium has been associated with disease in other dolphins. A severe infection with brain swelling could easily have been enough to bring him to the beach. We have not finished our study of the brain, but we will follow up on it in the next report. The white foam filling the airways is a pretty good indicator of heart failure. The heart cannot move blood along as fast as it should, and it pools in the lungs, raising the pressure in the tiny vessels of the lung to the point where they leak fluid. This mixes with inspired air to form foam.

To follow up on this case report (LA 042), the dolphin's brain was normal.