

SP 383

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SP 383 was a large (253 cm long, 158 kg) female bottlenose dolphin, *Tursiops truncatus*. She was recovered dead from Taylor's Bayou, near Port Arthur, Orange County, Texas on March 15, after a period of intermittent observation for several days. She did not appear to be distressed, but 'out of habitat' in a fresh water bayou. Dolphins can tolerate fresh water for several days, but eventually, they develop serious skin problems. Observers thought she looked emaciated. Death was not observed, and the assumption is that the animal found is the animal observed, as no other dolphins were in the limited access (locks) waterway. Necropsy begun 9:00 AM, March 16. By the time she arrived at the laboratory, she had reached preservation status Code 3. I do not normally do a full necropsy on high code animals, as decomposition (autolysis) and bacterial action are very destructive of tissues, and microscopic study is of little value. Given the circumstances of the case, it seemed worthwhile to do it.

At necropsy, she did not appear to be emaciated as there was only a hint of a neck, and the sides were rounded. The blubber measurements did not suggest emaciation. There were many small ulcerated epidermal lesions, most of which appear to be healing or nearly healed. An exception was two lesions on the underside of the left fluke which had a mushroom configuration, suggesting fibrin clot. She also had many healed scars, including rakes and cookie cutter bites, and long gouges. The fluke with the pustules had lost its tip in the past, but it is well healed. The teeth were badly worn; some were broken and some were missing.

Internal examination: The intestine was distended with gas, but otherwise

seemed normal. The stomach was empty. The peritoneal space was normal. Both pleural spaces were obliterated by dense fibrous adhesions, and the lungs could be removed only by sharp dissection.

The lungs showed many small areas of greenish white discoloration, consistent with pneumonia. A few nematode lung worms were present.

The pericardial space over the left ventricle was partly obliterated by old dense fibrous adhesions. The heart showed yellowish blotching throughout, plus several small pearly gray areas typical of scar (2-3 mm) and yellow areas 3-4 mm, typical of necrosis in the left ventricle. The aorta was normal.

The abdominal organs (liver, pancreas, spleen and kidneys) were normal, but congested and soft.

Both ovaries were studded with many small yellow to white nodules. The uterus was grossly normal.

The spinal cord at the base of the skull, together with its coverings (meninges) was collected.

Interpretation: There are many findings in this animal. The nodules in the ovaries (*corpora albicantia*) are the residue of ovulation and formation of corpora lutea, which generally signal a past pregnancy. From this we might infer that this animal was as old as she looked, and had borne many calves over the years. Her heart was impressively scarred, 'marbled' throughout with fibrosis, indicating an accumulation of myocardial injury over the years. I have seen a lot of this, and I attribute to the effects of stress on the heart. As always, the coronary arteries were normal. She had scarring and adhesion of the pericardium to the heart, and

fusion of the pleural surfaces to each other, to partly obliterate the pleural space. These are the residue of old, healed inflammation. We rarely see adhesions of this extent and density. No doubt she had a bout of pleuritis ('pleurisy') in the past. While this is not normal, the degree of scarring of the pleura is tolerable, and probably did not give much functional impairment. There were many areas of pneumonia, which appear recent, and there is also considerable new injury to the heart muscle. Conspicuously absent was any evidence of injury, and the parasite burden was light. There was no evidence of meningitis.

So, what's going on? We have an old female, with many marks and scars, both internal and external, who took it into her head to follow a shrimper into a fresh water bayou, and then head miles upstream. She was not feeding, evidenced by the empty stomach, even though the water she was in is full of fish. She did not seem to be incapacitated, as she kept on the move. I cannot tell how limiting her heart lesions were, but I doubt they were severely restricting. I think the water was probably a hazard, not only because of its lack of salinity, but it would have exposed her to new pathogens. I can attribute her death to infection, and probably to stress cardiomyopathy. Could she have been rescued? I doubt it; given the state of her heart, a serious rescue attempt involving motor boats and nets would likely have killed her. I'm inclined to think of her as a solitary old female who was at the end of her life, and for whatever reason, chose to spend her last hours in Taylor Bayou.

General impression from the gross examination: An old female, with many marks and scars, old fibrous pleural adhesions and pericardial adhesions; patchy pneumonia; myocardial scars and probably cardiomyopathy. Death is attributed to cardiomyopathy, probably stress related; no sign of injury, no evidence of human interaction.