

**GA 664**

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GA 664 was a 255 cm 130.4 kg female *Tursiops* (bottlenose dolphin) recovered dead, Code 2 (very fresh), from East Beach (Galveston Condominiums) Galveston August 29, 1994. This animal was very emaciated. The neck was pronounced, the skull bones protruding, the ribs prominent. Two live *Xenobalanus* were present on the flukes at the necropsy.

The lining of the mouth was greenish and thickened. There was a plaque-like thickening of the mucosa of the base of the tongue and another in the esophagus about halfway to the stomach.

The striking feature of the internal organs was a very marked, 3 times normal thickening of the walls of the glandular portions of the stomach. The outlet of each chamber was greatly reduced, and the final outlet was only about 3 mm diameter. The mucosal surfaces were all normal. The thickening was caused by fibrosis of the support tissues of the lining of the chambers, and of the muscle walls. The stomach chambers were all empty, and the intestine contained only a thin greenish chyle. The common bile duct was also thickened.

There was also necrosis of the muscle of the heart, which appeared to be about 2 to 3 days old. All the coronary vessels were normal, as was the aorta. The pleura was thickened, but still transparent. The lungs were congested, but there was no pneumonia or other significant inflammation. No lung worm was identified. The air sinuses were free of parasites.

All the lymph nodes and the spleen were very depleted of lymphocytes.

The adrenal glands were both large. The left was the largest we have seen by 1 gram, and the right by 0.5 gram. The kidneys, ureters and bladder were normal.

COMMENT: This animal was the most emaciated animal we have seen in over 3 years. We have not seen this fibrous thickening of the stomach before. It may be that the stomach was so thick and stiff from fibrosis that she could not eat properly, and starved, which would have explained the emaciation. The loss of lymphocytes from the lymph nodes and spleen suggest a severe virus infection, or the result of some toxin which we have not identified. The lymphocyte depletion suggests immune failure, and perhaps infection with morbillivirus. The other signs of morbillivirus infection were not present however, nor were signs of secondary infection by opportunistic organisms. She was remarkably free of parasites. We are sending tissues to the Armed Forces Institute of Pathology Laboratories for virus testing. A large proportion of the animals in the increased mortality earlier this year tested positive for morbillivirus. The cardiac necrosis we attribute to stress. We have some ideas about the mechanism, and are studying a number of cases with these changes. At this point we can't explain the fibrosis of the stomach.

Because we have seen a number of animals with liver inflammation suggesting mild hepatitis, we have begun to test for hepatitis virus, using materials designed for testing in man. This animal tested positive for hepatitis B surface antigen. This is a very interesting finding, even though she does not have evidence of active hepatitis. While possible that she was infected with human hepatitis virus, I think it is more likely that there is a dolphin hepatitis B virus. Several species, including the woodchuck, Beechey's ground squirrel, and the duck all have hepatitis viruses so closely related to the human hepatitis virus that they cross-react and show as positive when tested for the human virus. This is a very interesting and potentially very important observation about the biology of the hepatitis viruses,

and is further evidence, if any were needed, of the value of the contribution of time and effort by the volunteers of the Network.