



LLOYD WHITE, M.D., PH.D., S.T.L.
ANATOMIC, CLINICAL AND FORENSIC PATHOLOGY
200 FELIKS GWOZDZ PLACE
FORT WORTH, TEXAS 76104-4919

20 June 2011

**RE: *State of Texas v. Swearingen*, no. 99-11-06435-CR, in the 9th District Court,
Montgomery County, Texas**

REPORT OF EXAMINATION

Proposition To Be Evaluated

On January 2, 1999, the body of Melissa Trotter was found out-of-doors, on the surface of the ground, in a forest environment. Despite being exposed to weather, as well as insects and carnivore scavengers, the body was well-preserved and manifested only very early changes of post-mortem decomposition. As documented by the National Oceanographic and Atmospheric Administration, ambient temperatures at this location during the three weeks prior to discovery of the body ranged between average highs in the 70's and average lows in the 40's. Therefore, it is categorically impossible, beyond all reasonable doubt, that Ms. Trotter was killed and her body left at that location by Mr. Larry Swearingen, who had been incarcerated in the Montgomery County Jail since December 11, 1998, 23 days before the body was found.

Specimens Examined

Five microscopic glass slides representing tissue obtained by Harris County Chief Medical Examiner Joye M. Carter, M.D., during the course of an autopsy on the body of Ms. Trotter (Harris County Medical Examiner case no. 99-02).

Location of Examination

University of North Texas Marine Biology Laboratory, Denton Texas

Instrument Used for Examination

Zeiss AxioObserver Z1 inverted research microscope with positive and negative phase contrast, narrow bandwidth Colibri LEDs, and stabilizing motorized controls to produce high contrast images at 1600X using an optivar. Magnification and resolution obtainable with this equipment permitted a detailed examination of tissue slides not possible with the routine light microscopy previously used in this case.

Results of Examination

All tissues, including cardiac muscle, fat tissue, nerve, and lung, demonstrate retention of normal cytoplasmic and nuclear staining inconsistent with exposure out-of-doors in the circumstances here adduced for more than 48 to 72 hrs. Even when stored at the routine morgue cooler temperature of 40 degrees, bodies will decompose after only a few days to a degree much greater than that seen in these specimens. Any reasonable person can easily comprehend what would happen to a piece of meat if it were periodically removed from an ordinary kitchen refrigerator, usually kept at 40 degrees, and left outside on the ground in 70 degree weather for three weeks. In decomposing tissue, staining fades to a purple smudge, and nuclei themselves disappear entirely, along with all other details, leaving only ghosted outlines of normal architecture. After a few days, and often after only a few hours, even the ghosted outlines disappear and the tissue becomes unrecognizable under the microscope.

No decomposition changes of this sort are present in the autopsy slides from Melissa Trotter, where numerous cellular and subcellular details are well-stained and clearly visible using the Zeiss AxioObserver Z1. Nuclear margins, nuclear chromatin, and cell membranes, along with myofibrils, striations, and intercalated discs of cardiac muscle are intact and sharp. Albeit numerous bacteria, which typically appear throughout the body within hours of death, can be clearly seen with this research microscope, putrefactive changes caused by bacteria are not present.

Based on all of the facts in evidence, the tissues in slides labeled Harris County Medical Examiner case no.99-02 are from a person who has been dead no more than two or three days.

Conclusion

The minimal and very early decomposition seen on microscopic examination is consistent with that described by Dr. Carter in her gross examination at autopsy, and confirms a post-mortem interval of no more than two or three days. It isn't possible that Melissa Trotter was killed and her body left at that location by Mr. Larry Swearingen, who had been in jail for 23 days when the body was found.

The proposition is affirmed beyond all reasonable doubt.


Lloyd White, M.D., Ph.D.


Gary L. Sisler D.O.