Sometime during the Civil War, probably about 1862, Enoch pulled up his stakes in Hernando County, gathered his moveable property together, loaded his family & supplies into a wagon and moved down into Manatee County in the vicinity of Pine Level. This was several years before Pine Level gained its importance as the county seat. It is not known why Enoch & his family left Hernando County for a new frontier. It may have been that disputes and conflicts caused by the Civil War & intensified by Union sympathizers and slave owners in Hernando County induced the Mizells to seek a quieter residence in a peaceful, less populated area. The Bates and Platt families (both had moved to Manatee County earlier from Hernando County) may have written to the Mizells telling them of the great areas of rich land for farming and raising cattle.

Enoch E. Mizell was prevented from serving in the military during the Civil War because of his age and his injuries from the Indian Wars. The Enoch E. Mizell which served in Company B, 7th Florida Infantry of the Confederate forces was probably the son of Joseph Mizell who had settled in Hillsborough County.

In 1866, Pine Level was chosen as the new county seat of Manatee County. Enoch Mizell was a familiar figure around the new courthouse. He served as County Judge from 1866 to 1867 and was listed as such in the 1870 Census. He also served as a Justice of the Peace from 1866 to 1875. Many a couple in Pine Level and the surrounding areas were united in matrimony by Mr. Mizell.

Thirteen families were living in Township 37 of Manatee County in 1870 - one of which was Enoch Mizell whose occupation was given as Judge of County Court. Others living in this area were his oldest son, George Mizell, Benjamin Sloan, John F. Bartloff (Clerk of the Circuit Court), James A. Jones, Dennis Driggers, Andrew W. Garner (Sheriff), George W. Albritton & his wife Lenora Garner, Wells Hancey, Oliver Walker, Joshua Platt, George Walker and John M. Bates.

In 1874, Enoch applied for an Old War Invalid pension, based on his war service in his younger years. On his application, he gave his description as 5 feet 8 inches, fair complexion, light hair and blue eyes. His half-brother, Morgan Mizell, testified on his behalf but Enoch's application was rejected. The Pension Department stated that he could not furnish the evidence required, even though he had been granted land in Hernando County for his prior service, years before.

In 1880, Enoch & family were living in Precinct #1 of Manatee County. Some of his neighbors were A. W. Garner, Lewis Daniels, Dan E. Graham, Jesse Alderman, F. B. Hagan, Jeff Daniels, James D. Green and Andrew Green.

Enoch Everett Mizell died on September 22, 1887 and was buried in the Campground Cemetery at Pine Level, Florida. He did not have a will. On April 6, 1888 County Judge O. T. Stanford appointed his sons, Joseph and Joshua Mizell to be administrators of his estate. John W. Jackson and H. H. Norris were appointed appraisers of the estate and presented the following schedule of personal property to the County Judge: 1,800 stock cattle, 5 horses, 1½ yoke of oxen, 100 pounds of unwashed wool, one 30 gal. sugar kettle, one wagon, one plow, one organ, one clock, 2 sewing machines, one parlor stove, 7 bedsteads, 13 dining room chairs, 1 center table, 1 dining table,