B46 Dr. Walter C. McCrone's Contributions to the Characterization and Identification of Explosives

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Dr. McCrone was an amazing individual, possessing many talents and having many interests. He especially loved applying polarized light microscopy (PLM) to answering the question-at-hand and solving problems. He applied PLM to many different fields including the identification of air pollution particles, asbestos identification, art conservation, pharmaceuticals, industry problems, and forensic sciences. A field that this author believes he enjoyed the most was the characterization and identification of explosives. A trip to Cornell University with Dr. McCrone in the mid-eighties, where a PLM course was to be taught, is remembered. After setting-up for the course, 'Doc' escorted the author on a tour around Cornell showing the sites, including some of his old swimming holes, and where Professor Chamot lived. He also told a story, when he was a graduate student, about a young lady who was showing an unwelcome amount of attention. Doc said he whipped up a batch of ammonium tri-iodide crystals and placed the crystals along the hall where he lived at that time. A few hours later he heard the door open and as the footsteps came down the hallway the ammonium tri-iodide crystals "popped." Doc was surprised they did not impede what he thought was the young lady and got up to answer the knock on the door. To his surprise, it was Professor Chamot who said, "What are you up to McCrone?" One would have only needed to see the smile on the Doc's face to wonder if the story was true.

What is true is the "bible" on the characterization and identification of explosives that Doc developed for the military while he was at Cornell. The dissolved gases that appear as TNT re-crystallizes from a melt caused numerous problems would be a puzzle until Doc looked through a microscope and explained it. He encouraged two young forensic scientists in the early eighties with the Alabama Department of Forensic Science to publish a couple of articles on the characterization and identification of inorganic explosives. Throughout his life he continued work on and published articles on explosives. No one could take one of his courses without melting some TNT and watching with amazement as the crystals develop. The author hopes to show a brief glimpse into the world of explosives as Doc saw it through the PLM.

Dr. McCrone, Microscopy, Explosives

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