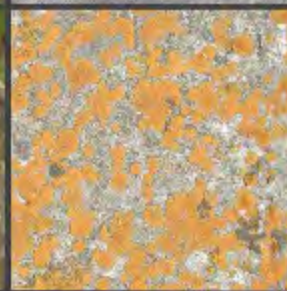


# Written in Stone

Exploring the Commonwealth's Historic Cemeteries



✦ Virginia Archaeology Month ✦✦✦ October 2010 ✦

Virginia Archaeology Month is sponsored by the Department of Historic Resources and co-sponsored by the Council of Virginia Archaeologists and the Archeological Society of Virginia. For more information and a calendar of events, visit [www.dhr.virginia.gov](http://www.dhr.virginia.gov).



# Cemetery Resource Guide



Angel detail, Norman Cemetery, Stafford County, Virginia. Photo credit: Anita Dood.



Mourning figure, Hollywood Cemetery, City of Richmond, Virginia. Photo credit: Caitlin O'Grady.

## VOCABULARY AND TERMS

**Abrasion:** a surface loss caused by excess friction such as rubbing or handling

**Bedding planes:** the surface separating successive layers of stratified rock; associated with sandstone and other sedimentary rocks

**Biological degradation:** a type of surface degradation caused by fungal, lichen or other organisms, which produce enzymes that dissolve, stain, or degrade the host material provided sufficient humidity

**Corrosion:** degradation of material from a chemical or electrolytic reaction; generally applied to metal and stone degradation; rust, bronze, copper and zinc corrosion are the types of corrosion most frequently associated with cemeteries

**Cracks:** narrow fissures or fractures in the stone; hairline cracks do not exhibit significant space between the fissure or fracture, while widened cracks have significant space between both sides of the fissure/fracture

**Delamination (see image 1 below):** stone damage resulting from stone breaks or separations along bedding planes usually resulting in breakage; may be the result of frost damage, exposure to fire, etc.

**Discolored/stained:** stone discoloration caused by vegetation, fungus, pollution or chemical reaction; staining and any information regarding its cause should be noted; different stains require different approaches to cleaning

**Disfigurement:** a change that defaces, modifies, or blemishes the original appearance and intention of the maker; they may be intentional (as an element of a different style) or accidental (as stains)

**Displaced (image 2 below):** a stone/artifact that has been moved from its original location

**Efflorescence:** deposits of white salts on stone surface that can be caused by many things including (1) fertilizers and weed-killers, (2) air or water pollution, (3) use of gray Portland cement in concrete and mortars, and (4) some cleaning compounds

**Erosion:** a gradual wearing away of stone surface resulting in rounded, blurred edges, and damage to carved details; caused by natural abrasion due to wind and wind blown particles, and by dissolution of the surface by acidic rainfall

**Fragments:** small pieces; can be associated with a stone/artifact that is still standing, or, may represent the remains of the original stone/artifact, which has disintegrated

**Freeze-thaw:** cycle of repeated temperature changes that result in the freezing and thawing of water that has penetrated materials; results in surface and structural damage

**Friable:** easily breakable; crumbles

**Grain size:** refers to visible particles seen in stone surface

**Grime:** surface dirt that may be a combination of air-borne soot, nicotine, candle grease, etc.

**Grout:** material used to fill cracks and crevices in masonry and stones

**Gypsum crust:** black crust that, when removed, exposes the softer stone beneath; caused by acidic gases in the air; common to marble and limestone

**In situ:** a stone/artifact in its original location

**Mower scars:** abrasions/scratches caused by grass cutting equipment, usually near the bottom of the stone

**Porous:** a material that contains many small, interconnected holes (pores) that allow water, air, or other materials to pass through them (permeate); permeable

**Relative humidity (RH):** amount of water air can hold at a specific temperature; RH expresses the relationship between moisture in the air to the maximum amount of moisture that could be present in the air at a given temperature and is expressed as a percentage

**Soundness:** condition of a marker that shows no sign of damage, no improper previous repairs and no excessive deterioration (based on reasonable inspection)

**Spalling/scaling (image 3 below):** loss of flakes or fragments from surface due to frost, pressure and other mechanisms

**Structural damage:** damage, losses, etc. that cause degeneration of the overall structure

**Sugaring (image 4 below):** granular, sometimes powdery, stone surface that is characteristic of particularly fine-grained marbles and limestone; sugaring indicates gradual surface disintegration

**Surface accretion:** accumulation of extraneous matter on stone marker surface that alters original design, i.e. dirt, dust, grime, etc.

**Surface damage:** damage, losses, staining limited to the marker surface

**Tilted/sunken:** a stone that is no longer fully upright, but has not yet fallen; the extent to which a stone is tilted or sunken will determine the priority given for resetting



Images from left to right: 1. delamination, 2. displaced marker, 3. surface spalling, 4. sugaring. Photo credits: all images Caitlin O'Grady.

## TYPICAL MATERIALS IN CEMETERIES



### Granite

Granite is an igneous rock composed chiefly of quartz with coarse-grains that can take a high polish. Granite is one of the most common rocks found in continental crusts and is formed by slow, underground cooling of magma. Granite color depends on mineral content and may vary to include light pink and grey to red, brown and black. Granite is highly durable and often used for architectural and artistic purposes. Granite is relatively acid resistant. Most granite materials exhibit minimal weathering; however, some examples may lose surface polish over time.



### Limestone

Limestone is a sedimentary rock composed principally of calcium carbonate (calcite) or dolomite (magnesium carbonate mineral). Limestone varies greatly in texture and porosity. Dolomitic limestones often include fossils. It is usually white, gray, or buff in color. Limestone, unlike marble, does not take a polish well and items made of limestone will exhibit a more matte appearance. Under normal conditions, limestone weathers to a light silver gray or white depending on the stone variety, but is usually darker in color than the bright white associated with marble. Pollution and acid rain may cause significant deterioration. Breaks and cracking often occur along the bedding planes.



### Sandstone

Sandstone is a sedimentary rock that forms from sand-sized quartz particles held together by natural mineral cements. Sandstones generally have visible bedding planes that reflect the stone's formation process. Sandstones are porous, soft and easily worked. Over time, sandstones may lose individual grains and rising damp can cause significant condition problems. Sandstone and limestone deteriorate in similar ways. Rising damp and freeze-thaw cycles can cause spalling or surface delamination of cut or polished faces.



### Marble

Marble is a crystalline metamorphic rock composed of calcium carbonate. Marble forms from the alteration of limestone under intense geologic pressure. Marble is generally composed of calcite and aragonite (calcium carbonate minerals), and/or dolomite, which are generally white in color. Marble varies from bright white to colors caused by mineral impurities including pink, red, brown, grey or black. Marble is a soft rock (relative to granite) that is easily scratched, producing a white powder. Exposure to water and acids produces uneven weathering of individual grains. Common condition problems include dissolution by acid rain and sugaring. Marble will convert to gypsum when exposed to pollution containing sulfuric acid (i.e. acid rain). This can produce a black crust that will ultimately blister and crumble away from the stone surface. Marble is also prone to sugaring, a gradual disintegration of the surface, causing a rough granular, crystalline or powdery appearance.



### Slate

Slate is a homogeneous, foliated metamorphic rock that is fine-grained. Slate is derived from an original shale-type sedimentary rock composed of clay or volcanic ash through metamorphism. Slate is generally grey in color and can be split along stone cleavage and grain. The stone has extremely low water absorption and is resistant to frost damage and breakage due to freezing. Slate is used for grave markers where the stone is available.



### Concrete

Concrete is a building material composed of calcined limestone or Portland cement, clay, sand, water and/or gravel. Concrete can be molded in a wide variety of shapes and surface textures and funerary markers cast from concrete were often finished to resemble limestone. Hardness and strength depend on the proportions of cement, sand, and aggregate (gravel or stone) mixed with water. Concrete is gray or white unless artificially colored. Concrete is porous and is susceptible to damage from rising damp and freeze-thaw cycles, as well as extreme heat. Concrete deterioration includes cracking, spalling and delamination. When concrete is reinforced with iron or steel rebar, water exposure can result in rusting, corrosion and cracking.



### Brick

Brick is a block of fired ceramic material used in masonry construction and usually laid using mortar. Bricks are very porous and are susceptible to damage due to freeze-thaw cycles, as well as salts efflorescence.



### Iron

Iron is a magnetic and ductile metal element that occurs abundantly. Iron metals range in color, depending on the presence of oxygen and the method of manufacture. Iron materials are easily identified using a magnet. Some historic cemeteries incorporate iron monuments, crosses, fences or other decorative elements. Small iron medallions placed beside markers may indicate the deceased's affiliation with fraternal or military associations. Typical iron corrosion produces powdery orange or red surface deterioration products (rust). Iron corrosion is powdery and substantially decreases the metal's overall strength.

### Copper and Bronze

Copper is a ductile and malleable reddish-brown metal, while bronze is an alloy consisting chiefly of copper and tin, although it may consist of other metals alloyed with copper. Copper and bronze metals were used and continue to be used to produce medallions in cemeteries, as well as for repair materials. Copper and bronze will corrode when exposed to high relative humidity and soluble salts. The resulting powdery, light green corrosion substantially decreases the overall stability and strength of the metal.



### Zinc (white bronze)

Zinc (white bronze) is a bluish-gray nonmagnetic, metallic element that is generally brittle. When heated, zinc may be worked. Zinc has a high resistance to atmospheric corrosion. Often zinc was used to produce tall, commemorative monuments, though smaller markers such as tablets and ground markers were also available. The monuments are hollow and retain much of their original definition. Corrosion is a potential problem for any metal monument, especially in highly polluted or seaside atmospheres. Zinc monuments are relatively pure and survive remarkably well. For statues of the type that were originally painted, corrosion can be limited by regular painting. Some zinc monuments manufactured with copper-plating will exhibit extreme surface pitting due to corrosion.



Images from top: 1. granite detail, 2. limestone detail, 3. Joseph Littledale sandstone marker, Blandford Cemetery, City of Petersburg, 4. marble detail, 5. slate detail, 6. concrete enclosure, Hollywood Cemetery, City of Richmond, 7. brick, unknown marker, Blandford Cemetery, City of Petersburg, 8. President James Monroe cast iron monument, Hollywood Cemetery, City of Richmond, 9. copper Col. Walter Stevens marker, Hollywood Cemetery, City of Richmond, 10. Andrew L. Ingles cast zinc marker, City of Radford. Photo credits: Caitlin O'Grady (images 1, 2, 3, 4, 5, 6, 8, 9), Joanna Wilson Green (images 7 and 10).

## BURIAL LAWS IN THE CODE OF VIRGINIA

This list is provided for informational use only, and should not be considered comprehensive or complete. The Department of Historic Resources cannot interpret these laws for you. If you have questions or require additional information, we strongly recommend that you consult with a qualified legal professional.



Estli Cemetery, Town of Gate City, Scott County, Virginia. Photo credit: DHR Archives File.

**8.01-44.6 Action for injury to cemetery property –** allows recovery of damages sustained due to willful or malicious destruction, mutilation, defacement or removal of any cemetery element.

**10.1-2305 Permit required for the archaeological excavation of human remains –** procedure for obtaining a permit to allow professional archaeological recovery and physical analysis of human remains from historic cemeteries.

**15.2-2258 Plat of proposed subdivision and site plans to be submitted for approval –** persons wishing to subdivide property in any area where subdivision ordinances apply must include the location of any human graves or cemeteries within that property on the plat.

**18.2-125 Trespass at night upon any cemetery –** prohibits entrance to any cemetery, its grounds or parking/driving areas at night for any purpose other than to visit the gravesite of a family member (Class 4 misdemeanor).

**18.2-126 Violation of sepulture; defilement of dead human body –** prohibits unlawful removal of all or part of a buried human body (Class 4 felony). Also prohibits willful and intentional defilement of a dead human body (Class 6 felony).

**18.2-127 Injuries to churches, church property, cemeteries, burial grounds, etc. –** prohibits unauthorized damage to or destruction of plants, trees, funerary monuments and offerings, church buildings, fences, walls, etc.

**33.1-241 Roads not to be established through a cemetery or seminary of learning without owners' consent –** prohibits construction of roads through cemetery property without permission.

**45.1-252 Designating areas unsuitable for coal surface mining –** coal surface mining cannot be conducted within 100 feet of a cemetery.

**57-27.1 Access to cemeteries located on private property; cause of action for injunctive relief –** mandates access to cemeteries on private land for visitation, maintenance and genealogical purposes, with reasonable notice to landowner. Visitor assumes all liability.

**57-36 Abandoned cemeteries may be condemned; removal of bodies –** local governments may condemn abandoned or neglected cemeteries through eminent domain and use the land for other purposes.

**57-38.1 Proceedings by landowner for removal of remains from abandoned family graveyard –** landowners may petition the county or city circuit court for permission to remove and relocate human burials located in cemeteries in which there have been no burials for at least 25 years and upon which there are no reservations of rights.

**57-38.2 Proceedings by heir at law or descendant for removal of ancestor's remains from abandoned family cemetery –** heir or descendant may petition the county or city circuit court for permission to remove and relocate an ancestor's remains from a cemetery in which there have been no burials for at least 25 years.

**57-39 Proceedings for removal of remains and sale of land vacated –** owners or trustees of neglected or disused cemeteries and potter's fields may petition the county or city circuit court for permission to relocate the remains and sell the property. In the case of a potter's field, the court may mandate that the proceeds be used for charitable purposes.

**57-39.1 Improvement of abandoned and neglected graveyards –** owners of land adjacent to abandoned or neglected cemeteries may petition the court for permission to return the cemetery to a suitable condition.

## SUGGESTED READINGS: CEMETERY PRESERVATION

Carmack, Sharon DeBartolo, ed. *Your Guide to Cemetery Research*. Cincinnati: Betterway Books, 2002.  
Hacker, Debi. *Iconography of Death: Common Symbolism of Late 18th Through Early 20th Century Tombstones in the Southeastern United States*. Columbia, SC: Chicora Foundation, 2001.  
Potter, Elizabeth Walton and Beth M. Boland, eds. *National Register Bulletin 41: Guidelines for Evaluating and Registering Cemeteries and Burial Grounds*. U.S. Department of the Interior National Park Service Interagency Resources Division National Register of Historic Places, 1992. (Available online at <http://www.nps.gov/history/nr/publications/bulletins/nrb41/>)  
Strangstad, Lynette. *Preservation of Historic Burial Grounds*. Washington, DC: National Trust for Historic Preservation, 2003.  
Strangstad, Lynette. *A Graveyard Preservation Primer*. Walnut Creek, CA: Altamira Press, 1995.  
Trinkley, Michael. *Grave Matters: The Preservation of African-American Cemeteries*. Columbia, SC: Chicora Foundation, 1995.

**FOR MORE INFORMATION OR TO RECORD A CEMETERY IN VIRGINIA, PLEASE CONTACT THE DEPARTMENT OF HISTORIC RESOURCES ARCHIVES AT (804) 367-2323.**

Poster front photographs: **Row 1** 1. St. Georges Church, Accomack County, 2. fieldstone marker and running cedar, Cemetery of North Salem Lane, Stafford County; **Row 2** 1. repaired child's headstone, Hollywood Cemetery, City of Richmond, 2. [large image] Hollywood Cemetery, City of Richmond, 3. copper staple repair detail, St. John's Episcopal Church, City of Fredericksburg, 4. Estli Cemetery, Town of Gate City, Scott County, 5. Pocahontas Cemetery, Town of Pocahontas, Tazewell County; **Row 3** 1. excavations at 44JC0043, Drummond Site, James City County, 2. marker delamination, Blandford Cemetery, City of Petersburg, 3. broken rosebud iconography, Hollywood Cemetery, City of Richmond, 4. excavations at 44WB0003, College Landing, Williamsburg County; **Row 4** 1. mourning figure, Blandford Cemetery, City of Petersburg, 2. Injun Tom marker, Waterford African-American Cemetery, Loudoun County, 3. urn and willow detail, Masonic Cemetery, City of Fredericksburg, 4. child reclining detail, Hollywood Cemetery, City of Richmond, 5. lichen detail, Hollywood Cemetery, City of Richmond. Photo credits: DHR Archives File (images **Row 1** 1, **Row 2** 4, 5, **Row 3** 1, 4, **Row 4** 1), M. Amanda Lee (**Row 1** 2), Joanna Wilson Green (**Row 2** 1, **Row 3** 3, **Row 4** 2, 3, 4, 5), Kathy Waters-Grayson (**Row 2** 2) Caitlin O'Grady (**Row 3** 2).