Because Gravestone Cleaning Methods Matter Keep Power Tools and Harsh Chemicals Out of the Cemetery By Linda Jean Limes Ellis – Email: <u>ljellis_2000@yahoo.com</u> <u>Exploring Almost Forgotten Gravesites in the Great State of Ohio</u> May, 2017

So it is that township trustees and other cemetery operators are entrusted with the solemn duty of ensuring their cemeteries are well maintained. However, often due to circumstances beyond control, those blackened and lichen covered markers and monuments rendered now unreadable, and forlornly afflicted with various other condition issues, can no longer be ignored. This realization precipitates adopting a plan to regain the integrity of the cemetery; and restore the respect we owe the honored dead and their gravestones that identify and memorialize them.

After a proper assessment is made a decision may be to seek paid help to address the restoration needs of the affected monuments and markers. Because much of this type of work includes seemingly basic gravestone cleaning, this will be the topic of emphasis explored. See Page Six: "Rapid Cemetery Assessment Form."

Because gravestone cleaning methods matter, logically so does hiring the right person and company who will adhere to those methods that are included in the "Best Practices of Do No Harm" principles proven to be safe and appropriate for each unique grave marker.

In the early planning stage it might be tempting to fall back on the familiar by reaching out to hire the same business that handled past projects; perhaps a local monument company, or a friend who is handy with tools and likes outdoor work, or perhaps someone referred by a friend or another township trustee. Please consider if the cemetery has fragile 19th Century marble, limestone, or sandstone grave markers. This is often the situation for cemeteries that have newer as well as older sections. Primarily, the monument companies expertise lies with addressing issues affecting modern day granite grave markers. Muriatic acid is their common cleaning choice. Often high PSI pressure power washers are used to remove lichens and stains. Neither of these are safe or approved methods to use on 19th Century fragile and porous marble, limestone, or sandstone markers (see reference ***).

Another scenario might arise when the person under consideration for a gravestone cleaning project provides credentials of their having attended accredited hands-on cemetery preservation workshops. Some might even conduct such types of classes in Ohio or in other states. Unfortunately, this still does not necessarily guarantee that they will adhere to **all** of the "Best Practices of Do No Harm" principles that they were taught at those workshops. They might decide it's better for them to opt for quicker and easier shortcut methods using cheaper products for the cleaning work that are not appropriate and cause more harm than good – including irreversible damage to the gravestones. Please reference: **NCPTT** – "**Abrasive Cleaning of Gravestone Markers**" shown on Page Two and at the end of Page Nine.

Thus, to learn further details about the importance of adopting proper gravestone cleaning methods, we can refer to the authoritative in-depth information contained in the "Best Practices of Do No Harm" statements and publications provided by well respected national and state preservationists.

To this end, following are some relevant links, and statements quoted with permission, from the <u>NCPTT</u> and <u>Lynn Strangstad</u>, both nationally known for their well respected contributions in this field of preservation; and Mr. Nathan Bevil of the Preservation Office of the Ohio History Connection.

Pages Four is a chart compiled by this author listing several Approved Products for cleaning gravestones like marble, sandstone and limestone. Also listed are "Unapproved Products". Page Five lists the sources.

Websites listed below are for the National Park Service's NCPTT.:

1. NCPTT – The National Center for Preservation Technology and Training of the National Park Service.

The NCPTT conducts hands-on cemetery preservation workshops.

• <u>https://www.ncptt.nps.gov/</u> - Main Link to website.

NCPTT – "Abrasive Cleaning of Gravestone Markers":

https://www.ncptt.nps.gov/blog/abrasive-cleaning-of-grave-markers/

The above link is for a comprehensive article written by Dr. Mary Striegel of the NCPTT, and published July 24, 2014.

"NCPTT does not advocate the use of power tools to clean headstones. The use of such tools can abrade and remove granules from weathered marble and limestone. We do not advocate grinding, re-lettering, or polishing headstones as this alters the original surface of the grave marker. The company that makes Nyalox brushes compares their performance to wire brushes, which are much too harsh for a stone surface. Would you use a Nyalox brush on a power drill to clean the surface of your automobile? If not, then you would not use it to clean a grave marker."

NCPTT – "New NPS Preservation Brief #48 "Preserving Grave Markers in Historic Cemeteries" – December 12, 2016.:

• <u>https://www.ncptt.nps.gov/blog/48-preserving-grave-markers/</u>

NCPTT – "Best Practice Recommendations for Cleaning Government Issued Headstones"

• <u>https://www.ncptt.nps.gov/blog/best-practice-recommendations-for-cleaning-government-issued-marble-headstones/</u>

Many of the best practice recommendations provided in the above document are applicable to monuments and markers other than government issued ones, *including*:

"Never aggressively scrub the surface, or use wire brushes or mechanical methods such as sanders or grinders to clean the surface."

NCPTT – "Comparative Study of Commercially Available Cleaners for use on Federally-issued Headstones":

• <u>https://www.ncptt.nps.gov/blog/comparative-study-of-commercially-available-cleaners-for-use-on-federally-issued-headstones-3/</u>

2. Lynette Strangstad

Statement from Lynette Strangstad, Author of "A Graveyard Preservation Primer":

"Briefly, in my opinion, "polishing" an old gravestone is not appropriate. The entire stone is altered. Some of the surface is removed. And that fragile surface is the very reason most consider the stone valuable (though that is only part of the significance).

In grinding the surface (that is, polishing), one is removing part of the lettering. Three or four such abrasive cleanings (over time, say, 15 or 20 years) could easily equal the stone loss that would occur naturally in a hundred or more years. It's good to remember that care for gravestones is not just to satisfy our aesthetic desires in the present; it is to preserve the stone for future generations.

The important thing to remember is that "less is more" and the least aggressive treatment that can clean effectively is the best. Also to be remembered is that no old gravestone should "look like new." It's not; it's historic."

3. Nathan A. Bevil

Statement from Nathan A. Bevil – Community Planning & Preservation Manager Ohio History Connection (formerly the Ohio Historical Society):

"I have also worked with some cemeteries in the past, including those that have had some restoration work. Most of the stones used, especially in older cemeteries, are extremely soft due to stone type and exposure to acid rain and nature in general.

Any abrasive method of cleaning is discouraged, much less using power tools. Even power washing is discouraged, as this can deeply groove sandstone and marble. Any cleaning of a gravestone must be taken with careful consideration. I have seen enough stones that have deteriorated to the point that I would not even use a simple bristle brush. Always conduct thorough research on the materials before undertaking a specific action, and feel free to contact our office for additional information.

In any case, power washing and power tools are always discouraged and can have disastrous results for historic gravestones.

If you have some specific cases you would like to discuss, please feel free to contact me (nbevil@ohiohistory.org or at 614-298-2000). I hope this information helps."

Nathan A. Bevil | Community Planning & Preservation Manager <u>Ohio History Connection</u> | 800 E. 17th Ave., Columbus, OH 43211 p. <u>614.298.2000|nbevil@ohiohistory.org</u>

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Thus, I feel that a polite, but serious request – preferably one stated in writing, should be posed to the person you consider hiring to agree to take a "**No power tools** / **No harsh chemicals pledge.**"

Your emphasizing the importance of adhering to the Best Practices of Do No Harm will serve to ensure that indeed no irreversible damage will occur to those grave markers that are waiting to be properly cleaned. Yes, the key word is *properly*!

**Gravestone Cleaning Products – Approved and NOT Approved** 

\*\*\*\*\*Do not attempt to clean flaking or crumbling gravestones!\*\*\*\*

\*\*\*Remember to assess gravestone type and condition before conducting work\*\*\*

(Compiled By Linda Jean Limes Ellis – Updated May, 2017)

| GENERALLY APPROVED GRAVESTONE CLEANING PRODUCTS                                                                                                                                                                                                                           | UNAPPROVED PRODUCTS                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          |  |
|---------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|--------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|--|
| Distilled Water (preferred) & soft bristle hand held brush                                                                                                                                                                                                                | Bleach*                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      |  |
| D/2 Biological Solution™ & soft bristle hand held brush<br>Material Safety Data Sheet:<br><u>http://www.d2bio.com/sites/default/files/MSDS_D2_102012.pdf</u><br>Website:<br><u>http://www.d2bio.com/</u>                                                                  | Ammonia*                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     |  |
| Enviro Klean® Revive by Prosoco & soft hand held bristle brush<br>Material Safety Data Sheet:<br><u>http://www.prosoco.com/Content/Documents/Product/EK ReVive MSDS 061513</u><br><u>_C.pdf</u><br>Website:<br><u>http://www.prosoco.com/products/enviro-klean-revive</u> | Household cleaners such as "Formula<br>409", etc.<br>No acid or acid based solutions<br>"Products containing sodium chloride,<br>sodium sulfate, sodium carbonate,<br>sodium bicarbonate and ammonium<br>carbonate, due to their ability to form<br>and deposit soluble salts in<br>monuments." <b>**</b>                                                                                                                                                                                                                                                                                                    |  |
| Orvus® Paste Soap & soft bristle hand held brush<br>Link to Material Safety Data Sheet:<br><u>http://www.pgproductsafety.com/productsafety/msds/professional_line/</u><br><u>professional_line/P&amp;G_Pro_Line_Orvus_WA_Paste.pdf</u>                                    | "Nyalox®" plastic brushes attached to<br>Power Drills that rotate at high<br>speeds***                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       |  |
| Plastic Scrapers                                                                                                                                                                                                                                                          | Wire Brushes of any kind – hand held or on power tools. ***                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  |  |
| Wood Scrapers for small spaces                                                                                                                                                                                                                                            | Power Washers ***                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            |  |
| Soft natural bristle (Tampico) Brush                                                                                                                                                                                                                                      | "Wet & Forget®"<br>Material Safety Data Sheet:<br><u>http://complyplus.grainger.com/grainge</u><br><u>r/msds.asp?sheetid=3809640</u><br>"Severe eye irritant. Corrosive to skin – repeated<br>or prolonged contact may result in dermatitis or<br>skin sensitization. Ingestion can cause burning<br>pain in mouth, throat and abdomen.<br>May be fatal if ingested"                                                                                                                                                                                                                                         |  |
| Soft bristle tooth brush                                                                                                                                                                                                                                                  | Muriatic Acid ***<br>Used by monument dealers on granite<br>but it is not appropriate for use on other<br>types of gravestones:<br>Material Safety Data Sheet:<br>http://www.sciencelab.com/msds.php?<br><u>msdsId=9924285</u><br>"May cause damage to the<br>following organs: kidneys, liver, mucous<br>membranes, upper respiratory tract, skin, eyes,<br>Circulatory System, teeth.<br>Other Toxic Effects on Humans:<br>Very hazardous in case of skin contact (corrosive,<br>irritant, permeator), of ingestion, . Hazardous in<br>case of eye contact(corrosive), of inhalation (lung<br>corrosive)." |  |
| Natural Sponge                                                                                                                                                                                                                                                            | Metal Scrapers or "Brillo" type pads                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         |  |

#### Sources:

\* "NCPTT - Comparative Study of Commercially Available Cleaners for use on Federally-issued Headstones":

https://www.ncptt.nps.gov/blog/comparative-study-of-commercially-available-cleaners-for-use-onfederally-issued-headstones-3/

#### "Save A Grave":

http://saveagrave.net/cleaning-a-gravestone

\*\* "Save A Grave": <u>http://saveagrave.net/cleaning-a-gravestone</u>

\*\*\* "Gravestone Cleaning: What Not To Do" by Jonathan Appell":

http://www.gravestonepreservation.info/articles/gravestone-cleaning-what-not-do

"Stone Revival Historical Preservation – Cleaning Headstones":

http://stonerevival.net/2017/05/05/cleaning-headstones/

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#### **Additional References:**

• Illinois Preservation Agency:

"Cemetery Preservation"

https://www2.illinois.gov/ihpa/Preserve/Cemetery/Pages/default.aspx

"Cleaning Stone Grave Markers" from the Illinois Preservation Agency – (A 27 page PDF document covering gravestone cleaning in greater detail.):

https://www2.illinois.gov/ihpa/Preserve/Cemetery/Documents/Cleaning%20Grave%20Markers.pdf

• Michigan Historic Cemeteries Preservation Guide http://www.michigan.gov/documents/hal\_mhc\_shpo\_Cemetery\_Guide\_105082\_7.pdf

• Association for Gravestone Studies https://www.gravestonestudies.org/ "Rapid Cemetery Assessment Form" below used by the National Park Service A helpful form to use following a catastrophic disaster at a cemetery.

|                                                                                                                                                                                                                                                                                                                                                               | Rapid Ceme                                                                                                                                                                                                                                                                   | tery Assessmen                                                                           | t Form                                                                     |                                                                                 |    |  |
|---------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|------------------------------------------------------------------------------------------|----------------------------------------------------------------------------|---------------------------------------------------------------------------------|----|--|
|                                                                                                                                                                                                                                                                                                                                                               | Inspection date/ time                                                                                                                                                                                                                                                        |                                                                                          | ]AM [] PM                                                                  | Page 1 of<br>Attachments<br>Documents Photographs<br>Sketches Other<br>photo #s |    |  |
| Cemetery Desc<br>Cemetery Name<br>Address<br>County/Parish Name<br>Est Cemetery Size                                                                                                                                                                                                                                                                          | □ None<br>□ 1-10%<br>□ 10-30%<br>□ 30-60%<br>□ 60-90%                                                                                                                                                                                                                        |                                                                                          | lone<br>-10%<br>0-30%<br>10-60%<br>10-90%                                  | Owner/Contact Info                                                              |    |  |
| Record ,       Interment Type       Individual       Family       Multiple       Other         Lot/Section # or I.D.       Est number of structures       1       2-4       5-6       6-10       >10         This section of assessment describes the damaged structures and resources found within this section or lot. Check all items that display damage. |                                                                                                                                                                                                                                                                              |                                                                                          |                                                                            |                                                                                 |    |  |
| Structures                                                                                                                                                                                                                                                                                                                                                    | Materials Found                                                                                                                                                                                                                                                              | Coatings found                                                                           | Type of dama                                                               | age Level of dama                                                               | ge |  |
| □ Marker<br>□ Footstone<br>□ Box tomb/basal<br>□ Vault<br>□ Bedstead<br>□ Obelisk<br>□ Other                                                                                                                                                                                                                                                                  | Marble       Wrought Iron         Limestone       Bronze         Granite       Lead         Slate       Zinc (White Bronze)         Schist       Glass         Brick       Other         Wood       Cast Iron                                                                | Limewash<br>Cement Wash<br>Stucco<br>Modern Coating<br>Paint<br>Unknown<br>None<br>Other | Collapse Fallen Broken Missing Piece Stained Biological Gro Crosion Other  | □ 60-90%                                                                        | 5  |  |
| Enclosures                                                                                                                                                                                                                                                                                                                                                    | Materials Found                                                                                                                                                                                                                                                              | Coatings found                                                                           | Type of dama                                                               | age Level of dama                                                               | ge |  |
| □ Curb<br>□ Fence<br>□ Gate<br>□ Wall<br>□ Other<br>□ None                                                                                                                                                                                                                                                                                                    | □ Marble       □ Cast Iron         □ Limestone       □ Wrought Iron         □ Granite       □ Bronze         □ Slate       □ Lead         □ Sandstone       □ Zinc (White Bron.)         □ Schist       □ Concrete         □ Brick       □ Other         □ Wood       □ Wood | Limewash Cement Wash Stucco Modern Coating Haint Unknown One Other                       | Collapse Fallen Broken Broken Missing Piece Stained Biological Gro Content | □ 60-90%                                                                        |    |  |
| Landscapes                                                                                                                                                                                                                                                                                                                                                    | Materials Found                                                                                                                                                                                                                                                              |                                                                                          | Type of dama                                                               | age Level of dama                                                               | ge |  |
| <ul> <li>□ Trees</li> <li>□ Plants</li> <li>□ Ground Covering</li> <li>□ Roadways</li> <li>□ Walkways</li> <li>□ Others</li> </ul>                                                                                                                                                                                                                            | Annual plants       Gravel/peb         Perennial plants       Shell         Ornamental trees       Concrete         Shade Trees       Brick         Hedges       Pavers         Grass       Other                                                                            | bles                                                                                     | Fallen  Fallen on mc  Broken  Downed limb  Uprooted  Missing piece Other   | Ds □ 10-30%<br>□ 30-60%<br>□ 60-90%                                             |    |  |
|                                                                                                                                                                                                                                                                                                                                                               |                                                                                                                                                                                                                                                                              |                                                                                          |                                                                            |                                                                                 |    |  |
|                                                                                                                                                                                                                                                                                                                                                               |                                                                                                                                                                                                                                                                              |                                                                                          |                                                                            |                                                                                 |    |  |
| Storm Data         Storm Name         Storm Date           Nature of water         □ Standing         □ Flowing         □ Seepage         □ Water Marks         □ Other           Sediment deposited         □ On Site         □ In Structure         Site erosion         □ Yes         □ No         □ Don't know                                            |                                                                                                                                                                                                                                                                              |                                                                                          |                                                                            |                                                                                 |    |  |
|                                                                                                                                                                                                                                                                                                                                                               |                                                                                                                                                                                                                                                                              | rosion 🛛 Yes 🗌 No 🗌                                                                      | Don't know                                                                 |                                                                                 |    |  |
| Further Action<br>Further actions<br>Other recommendations                                                                                                                                                                                                                                                                                                    | Emergency Stabilization Urge                                                                                                                                                                                                                                                 | ent Attention D Brush/Tre                                                                | e Clearing 🔲 Cl                                                            | eaning 🔲 Repairs                                                                |    |  |
| Posting                                                                                                                                                                                                                                                                                                                                                       | Inspected Unsafe Restri                                                                                                                                                                                                                                                      | icted Use Historic Desi                                                                  |                                                                            | led Evaluation Needed                                                           |    |  |



March 26, 2015 - South Salem Cemetery, Buckskin Township, Ross County, Ohio Alexander & Jane Dickey gravestones. Repair and resetting work being conducted by a descendant, Scott Andersen, of Greenfield, Ohio.



March 26, 2015 - South Salem Cemetery, Buckskin Township, Ross County, Ohio Alexander & Jane Dickey gravestones. Left photograph – after repair and resetting work was completed. Right photograph – after light cleaning with a soft bristle brush and water followed by an application of <u>D/2 Biological</u> <u>Solution<sup>TM</sup></u>.



April 19, 2015 – The above photograph shows how the Alexander & Jane Dickey gravestones appeared following the cleaning, repair, and resetting process. All work was completed without the use of any power tools or harsh chemicals not approved for use on gravestones.

South Salem Cemetery on "Find A Grave":

http://www.findagrave.com/cgi-bin/fg.cgi?page=cr&CRid=155291&CScn=south+salem&CScntry=4&CSst=37&

Alexander Brown Dickey:

http://www.findagrave.com/cgi-bin/fg.cgi?page=gr&GSln=Dickey&GSiman=1&GScid=155291&GRid=38853858&

Jane Henry Dickey, wife of Alexander Brown Dickey: http://www.findagrave.com/cgi-bin/fg.cgi?page=gr&GRid=38857999

#### The photos below are NOT what you want to see happening at your cemetery!

Link for the photo below where it was included in a video – South Bend Indiana: <u>http://www.wndu.com/home/headlines/Volunteers-help-repair-and-clean-City-Cemetery-headstones-308681641.html</u>



Bedford Historical Society Cemetery Restoration 2010

(Above) Bedford Historical Society, Bedford, Ohio – (Below) photo of instructor using Nyalox Wheels



NCPTT – "Abrasive Cleaning of Gravestone Markers": The above link is to a comprehensive article written by Dr. Mary Striegel of the NCPTT, and published July 24, 2014. https://www.ncptt.nps.gov/blog/abrasive-cleaning-of-grave-markers/

"NCPTT does not advocate the use of power tools to clean headstones. The use of such tools can abrade and remove granules from weathered marble and limestone. We do not advocate grinding, re-lettering, or polishing headstones as this alters the original surface of the grave marker. The company that makes Nyalox brushes compares their performance to wire brushes, which are much too harsh for a stone surface. Would you use a Nyalox brush on a power drill to clean the surface of your automobile? If not, then you would not use it to clean a grave marker."

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