# Southern Maryland Rock and Mineral Club



Rock Talk



# **APRIL 2020**



#### A Message to Members by Glenda Jordan, Clearwater Nature Center

While I wish I had better news, I just wanted to update everyone. M-NCPPC has taken further steps by announcing today (15 April 2020) that they are extending the shutdown of all facilities to the public through the end of May therefore the May 23rd Lapidary Club meeting and the May 26th Southern Maryland Rock and Mineral Club meeting are cancelled as are all other classes, programs, and events that had been scheduled for the month.

While parks/trails continue to stay open, in addition to the previous social distancing guidelines mentioned previously in the last update, they have also now declared people are no longer able to use outdoor tennis courts.

As the Nature Center gets updates from M-NCPPC for allowing events to re-start, Glenda will inform the club.

# The SMRMC meeting scheduled for April and May 2020 is cancelled.

Additional information can be found online at: http://pgparks.com/4826/COVID-19-Information

The Lapidary workshop is closed until further notice - both because of the shutdown and due to potential delays this will cause for the turtle pond renovation. Once we get a better idea on when renovations will happen you will be updated.

#### MINUTES

No minutes for March 2020 meeting due to COVID-19 closure of the meeting facilities. Also there will be no minutes for the April and May 2020 meetings.

In this issue:	
Minutes	1
Rocks, Minerals, and Fossils in the News	2
Upcoming Shows and Events: 2020	10
Member's Finds	12
Items Wanted/For Sale	12

# Smithsonian Releases 2.8 Million Images Into Public Domain

The launch of a new open access platform ushers in a new era of accessibility for the Institution

#### By Katherine J. Wu

SMITHSONIANMAG.COM

FEBRUARY 25, 2020

https://www.smithsonianmag.com/smithsonian-institution/smithsonian-releases-28-million-images-public-domain-

<u>180974263/?utm\_source=gosmithsoniannewsletter&utm\_medium=email&utm\_campaign=202003-gosmith&spMailingID=41932129&spUserID=NzQwNDU1MjAzNjgS1&spJobID=1720364278&spReportId=MTcyMDM2NDI3OAS2</u>

Culture connoisseurs, rejoice:

The <u>Smithsonian Institution</u> is inviting the world to engage with its vast repository of resources like never before.

For the first time in its 174-year history, the Smithsonian has released 2.8 million highresolution two- and three-dimensional images from across its collections onto an <u>open access online platform</u> (<u>https://www.si.edu/openaccess</u>) for patrons to peruse and download free of charge. Featuring data and material from all 19 Smithsonian museums, nine research centers, libraries, archives and the National Zoo, the new digital depot encourages the public to not just view its contents, but use, reuse and transform them into just about anything they choose—be it a postcard, a beer koozie or a pair of bootie shorts.

And this gargantuan data dump is just the beginning. Throughout the rest of 2020, the Smithsonian will be rolling out another 200,000 or so images, with more to come as the Institution continues to digitize its collection of <u>155 million items and counting</u>.

"Being a relevant source for people who are learning around the world is key to our mission," says <u>Effie Kapsalis</u>, who is heading up the effort as the Smithsonian's senior digital program officer. "We can't imagine what people are going to do with the collections. We're prepared to be surprised."

The database's launch also marks the latest victory for a growing global effort to migrate museum collections into the public domain. Nearly 200 other institutions worldwide—including Amsterdam's <u>Rijksmuseum</u>, New York's Metropolitan Museum of Art and the <u>Art Institute of Chicago</u>—have made similar moves to digitize and liberate their masterworks in recent years. But the scale of the Smithsonian's release is "unprecedented" in both depth and breadth, says <u>Simon</u> <u>Tanner</u>, an expert in digital cultural heritage at King's College London.

Spanning the arts and humanities to science and engineering, the release compiles artifacts, specimens and datasets from an array of fields onto a single online platform. Noteworthy additions include portraits of <u>Pocahontas</u> and <u>Ida B. Wells</u>, images of Muhammad Ali's <u>boxing headgear</u> and Amelia Earhart's record-shattering <u>Lockheed</u> <u>Vega 5B</u>, along with thousands of 3-D models that range in size from a petite <u>Embreea</u> <u>orchid</u> just a few centimeters in length to the <u>Cassiopeia A supernova remnant</u>, estimated at about 29 light-years across.

"The sheer scale of this interdisciplinary dataset is astonishing," says Tanner, who advised Smithsonian's open access initiative. "It opens up a much wider scope of content that crosses science and culture, space and time, in a way that no other collection out there has done, or could possibly even do. This is a staggering contribution to human knowledge."

Until recently, the Smithsonian was among the thousands of museums and cultural centers around the world that still retained the rights to high-quality digital versions of their artworks, releasing them only upon request for personal or educational purposes and forbidding commercialization. The reluctance is <u>often justified</u>. Institutions may be beholden to copyrights, for instance, or worry that ceding control over certain works could lead to their exploitation or forgery, or <u>sully their reputation</u> through sheer overuse.

Still, Kapsalis thinks the <u>benefits of the</u> <u>Smithsonian's public push</u>, which falls in line with the Institution's new <u>digital-first</u> <u>strategy</u>, will <u>far outweigh</u> the potential downsides. "Bad actors will still do bad," she says. "We're empowering good actors to do good."

One of the most tangible perks, Tanner says, is a "massive increase" in the scale of the public's interaction with the Smithsonian something that will maintain and boost the organization's already substantial cultural cachet for audiences old and new, especially as content trickles onto open knowledge platforms like Wikipedia. "As soon as you open the collections up, it's transformative," he says.

Most of the change, however, will happen far beyond the Smithsonian's walls. Listed under a <u>Creative Commons Zero</u> (CCO) license, the 2.8 million images in the new database are now liberated from all restrictions, copyright or otherwise, enabling anyone with a decent Internet connection to build on them as raw materials—and ultimately participate in their evolution.

"Digitizing the knowledge that's held [at the Smithsonian] to access and reuse transfers a lot of the power to the public," says <u>Andrea</u> <u>Wallace</u>, an expert in cultural heritage law at the University of Exeter. People are now free to interact with these images, she says, "according to their own ideas, their own parameters, their own inspirations," completely unencumbered.

To showcase a few of the countless spin-offs that access to the collections might generate, the Smithsonian invited artists, educators and researchers for a sneak peak into the archives, and will be featuring some of their creations at a launch event set to take place this evening. Among them is a series of sculptures crafted by artist <u>Amy Karle</u>, depicting the National Museum of Natural History's 66-million-yearold triceratops, Hatcher. Karle, who specializes in 3-D artworks that highlight body form and function, was keen on bringing the fossil to life in an era where modern technology has made de-extinctions of ancient species a tantalizing possibility. Six of her <u>nine 3-D printed sculptures</u> are intricate casts of Hatcher's spine, each slightly "remixed" in the spirit of bioengineering.

"It's really important to share this kind of data," Karle says. "Otherwise it's like having a library with all the doors closed."

Also on deck for the evening are three Smithsonian-inspired songs produced in collaboration with the Portland-based nonprofit <u>N. M. Bodecker Foundation</u>, which offers creative mentorship to local students. Written and recorded by Bodecker mentees, the songs will hopefully make the colossal open access collection seem approachable, says Decemberists guitarist <u>Chris Funk</u>, who runs a recording studio on the grounds of the Bodecker Building and mentored the songs' production.

"Historical figures probably wouldn't be the first thing you'd hear written in modern music," Funk says. But his students' creations add a contemporary pop culture twist to the tales of prominent figures like <u>Solomon</u> <u>Brown</u>, the Smithsonian's first African American employee, and <u>Mary Henry</u>, daughter of the Institution's first secretary, Joseph Henry. Additionally, author-illustrator duo Jon Scieszka and Steven Weinberg will debut How to Make a Collagasaurus, a howto booklet inviting kids to transform the Smithsonian collections into zany new art forms. The approach is an echo of their 2019 children's book, <u>AstroNuts</u>, which featured a cast of goofy, colorful characters pieced together from images from the Rijksmuseum's 2013 open access launch.

In the booklet, Smithsonian founder James Smithson, backed by an entourage of AstroNuts, walks the reader through the construction of an example Collagasaurus, cobbled together from museum mainstays now in the public domain, including George Washington's arm, a stegosaurus tail and Charlie Parker's saxophone as an elephantine nose.

"Steven and I are perfectly built for this," Scieszka says. "The thing I love to do is take something somebody else has, and mess it up." The goal, he adds, is to encourage kids to do the same—and maybe even learn a thing or two along the way.

A bevy of research efforts are likely to flourish under the era of open access as well. In one partnership with Google, the Smithsonian has deployed machine-learning algorithms to its datasets to flesh out its list of notable women who have shaped the history of science—an effort that's previously been aided by <u>contributions from the public</u>.

# ROCK TALK

"Being able to see an item is a very different thing than to make another use of it," Tanner says. "You get innovation more frequently and earlier if the knowledge people are relying on is available openly."

With more than 150 million additional items in its archives, museums, libraries and research centers, the Smithsonian is featuring less than 2 percent of its total collections in this initial launch. Much of the rest may someday be headed for a similar fate. But Kapsalis stresses the existence of an important subset that won't be candidates for the public domain in the foreseeable future, including location information on endangered species, exploitative images and artifacts from marginalized communities. If released, data and materials like these could imperil the livelihood, values or even survival of a vulnerable population, she explains.

"The way people have captured some cultures in the past has not always been respectful," Kapsalis says. "We don't feel we could ethically share [these items] as open access." Before that can even be discussed as a possibility, she adds, the communities affected must first be consulted and be made a crucial part of the conversation.

But Kapsalis and other Smithsonian personnel also stress the importance of

avoiding erasure. Many of these materials will remain available for viewing on-site at museums or even online, but the Smithsonian will retain restrictions on their use. "Representation can empower or disempower people," says <u>Taína Caragol</u>, curator of painting and sculpture and Latino art and history at the National Portrait Gallery. "It can honor someone or be mocking. We are not banning access. But some things need more context, and they need a different protocol for accessing them."

Above all, the open access initiative forges a redefined relationship between the Smithsonian and its audiences around the world, Kapsalis says. That means trust has to go both ways. But at the same time, the launch also represents a modern-day revamp of the Institution's mission—the "increase and diffusion of knowledge," now tailored to all that the digital age has to offer. For the first time, visitors to the Smithsonian won't just be observers, but participants and collaborators in its legacy.

"The Smithsonian is our national collection, the people's collection," Funk says. "There's something to that. To me, this [launch] is the Smithsonian saying: 'This is your collection, to take and create with.' That's really empowering."

# Copper's Virus-Killing Powers Were Known Even to the Ancients

The SARS-CoV-2 virus endures for days on plastic or metal but disintegrates soon after landing on copper surfaces. Here's why

By Jim Morrison

SMITHSONIANMAG.COM

APRIL 14, 2020

https://www.smithsonianmag.com/science-nature/copper-virus-kill-180974655/?utm\_source=smithsoniantopic&utm\_medium=email&utm\_campaign=20200419-Weekender&spMailingID=42293659&spUserID=NzQwNDU1MjAzNjgS1&spJobID=1741891007& spReportId=MTc0MTg5MTAwNwS2

When researchers reported last month that the novel coronavirus causing the COVID-19 pandemic survives for days on glass and stainless steel but dies within hours after landing on copper, the only thing that surprised Bill Keevil was that the pathogen lasted so long on copper.

Keevil, a <u>microbiology researcher</u> at the University of Southampton (U.K.), has studied the antimicrobial effects of copper for more than two decades. He has watched in his laboratory as the simple metal slew one bad bug after another. He began with the bacteria that causes Legionnaire's Disease and then turned to drug-resistant killer infections like Methicillin-resistant Staphylococcus aureus (MRSA). He tested viruses that caused worldwide health scares such as Middle East Respiratory Syndrome (MERS) and the Swine Flu (H1N1) pandemic of 2009. In each case, copper contact killed the pathogen within minutes. "It just blew it apart," he says.

In 2015, Keevil turned his attention to <u>Coronavirus 229E</u>, a relative of the COVID-19 virus that causes the common cold and pneumonia. Once again, copper zapped the virus within minutes while it remained infectious for five days on surfaces such as stainless steel or glass.

"One of the ironies is, people [install] stainless steel because it seems clean and in a way, it is," he says, noting the material's ubiquity in public places. "But then the argument is how often do you clean? We don't clean often enough." Copper, by contrast, disinfects merely by being there.

#### **Ancient Knowledge**

Keevil's work is a modern confirmation of an ancient remedy. For <u>thousands of years</u>, <u>long</u> before they knew about germs or viruses, <u>people have known</u> of copper's disinfectant powers. "Copper is truly a gift from Mother Nature in that the human race has been using it for over eight millennia," says Michael G. Schmidt, a professor of microbiology and immunology at the Medical University of South Carolina who researches copper in healthcare settings.

The first recorded use of copper as an infection-killing agent comes from Smith's Papyrus, the oldest-known medical document in history. The information therein has been ascribed to an Egyptian doctor circa 1700 B.C. but is based on information that dates back as far as 3200 B.C. Egyptians designated the ankh symbol, representing eternal life, to denote copper in hieroglyphs.

As far back as 1,600 B.C., the Chinese used copper coins as medication to treat heart and stomach pain as well as bladder diseases. The sea-faring Phoenicians inserted shavings from their bronze swords into battle wounds to prevent infection. For thousands of years, women have known that their children didn't get diarrhea as frequently when they drank from copper vessels and passed on this knowledge to subsequent generations. "You don't need a medical degree to diagnose diarrhea," Schmidt says.

And copper's power lasts. Keevil's team checked the old railings at New York City's Grand Central Terminal a few years ago. "The copper is still working just like it did the day it was put in over 100 years ago," he says. "This stuff is durable and the anti-microbial effect doesn't go away."

What the ancients knew, modern scientists and organizations such as the Environmental Protection Agency have confirmed. The EPA has registered about 400 copper surfaces as antimicrobial. But how exactly does it work?

Heavy metals including gold and silver are antibacterial, but copper's specific atomic makeup gives it extra killing power, Keevil says. Copper has a free electron in its outer orbital shell of electrons that easily takes part in oxidation-reduction reactions (which also makes the metal a good conductor). As a result, Schmidt says, it becomes a "molecular oxygen grenade." Silver and gold don't have the free electron, so they are less reactive.

Copper kills in other ways as well, according to Keevil, who has published papers on the effect. When a microbe lands on copper, ions blast the pathogen like an onslaught of missiles, preventing cell respiration and punching holes in the cell membrane or viral coating and creating free radicals that accelerate the kill, especially on dry surfaces. Most importantly, the ions seek and destroy the DNA and RNA inside a bacteria or virus, preventing the mutations that create drugresistant superbugs. "The properties never wear off, even if it tarnishes," Schmidt says.

Schmidt has focused his research on the question of whether using copper alloys in often-touched surfaces reduces hospital infections. On any given day, about <u>one in 31</u> <u>hospital patients</u> has at least one healthcare-associated infection, according to the Centers for Disease Control, costing as much as <u>\$50,000 per patient</u>. Schmidt's <u>landmark</u>

# **ROCK TALK**

study, funded by the Department of Defense, looked at copper alloys on surfaces including bedside rails, tray tables, intravenous poles, and chair armrests at three hospitals around the country. That 43-month investigation revealed a 58 percent infection reduction compared to routine infection protocols.

Further research stalled when the DOD focused on the Zika epidemic, so Schmidt turned his attention to working with a manufacturer that created a <u>copper hospital</u> <u>bed</u>. A <u>two-year study</u> published earlier this year compared beds in an intensive care unit with plastic surfaces and those with copper. Bed rails on the plastic surfaces exceeded the accepted risk standards in nearly 90 percent of the samples, while the rails on the copper bed exceeded those standards on only 9 percent. "We again demonstrated in spades that copper can keep the built environment clean from microorganisms," he says.

Schmidt is also a co-author of an 18-month study led by Shannon Hinsa-Leasure, an environmental microbiologist at Grinnell College, that compared the bacterial abundance in occupied and unoccupied rooms at Grinnell Regional Medical Center's 49-bed rural hospital. Again, copper reduced bacterial numbers. "If you're using a copper alloy that's always working," Hinsa-Leasure says, "you still need to clean the environment, but you have something in place that's working all the time (to disinfect) as well."

#### **Harnessing Copper**

Keevil and Schmidt have found that installing copper on just 10 percent of surfaces would

prevent infections and save \$1,176 a day (comparing the reduced cost of treating infections to the cost of installing copper). Yet hospitals have been slow to respond. "I've been surprised how slow it has been to be taken up by hospitals," Hinsa-Leasure adds. "A lot of it has to do with our healthcare system and funding to hospitals, which is very tight. When our hospital redid our emergency room, we installed copper alloys in key places. So it makes a lot of sense when you're doing a renovation or building something that's new. It's more expensive if you're just changing something that you already have."

The Sentara Hospital system in North Carolina and Virginia made copperimpregnated surfaces the standard across 13 hospitals in 2017 for overbed tables and bed rails after a <u>2016 clinical trial</u> at a Virginia Beach hospital reported a 78 percent reduction in drug-resistant organisms. Using technology <u>pioneered in Israel</u>, the hospital has also moved to <u>copper-infused bedding</u>. Keevil says France and Poland are beginning to put copper alloys in hospitals. In Peru and Chile, which produce copper, it's being used in hospitals and the public transit systems. "So it's going around the world, but it still hasn't taken off," he says.

If copper kills COVID-19, should you periodically roll a few pennies and nickels around in your hands? Stick with water, soap, and sanitizer. "You never know how many viruses are affiliated with the hand, so it may not completely get them all," Schmidt says. "It will only be a guess if copper will completely protect."

## **Calendar of Events**

April and May events have been postponed/cancelled and/or tentatively rescheduled due to the ongoing COVID-19 pandemic.

**CANCELLED** April 3-5, 2020 - Alexandria, VA - 47th Annual Atlantic Micromounters' Conference Sponsored by the Micromineralogists of the National Capital Area, Inc. To be held at the Holiday Inn Express 6055 Richmond Hwy. Alexandria, VA 22303. For more information visit <a href="http://dcmicrominerals.org/">http://dcmicrominerals.org/></a>

**CANCELLED** April 4-5, 2020 - Johnson City, NY - The New York Southern Tier Geology Club with be Holding It's 51st. annual Gem and Mineral show on April 4 and 5th. 2020 at the Johnson City Senior Center 30 Brocton St. Johnson City, New York. Contact: Thomas Ogden 96 West Main St. Bainbridge, N.Y. 13733 607-967-8552 <stonecuttertom@yahoo.com>.

**POSTPONED** April 18-19, 2020 - Portland, ME - 37th Annual Gem, Mineral & Jewelry Show of the Maine Mineralogical and Geological Society (Maine Mineral Club. Venue: Brick South, 8 Thompsons Point, PORTLAND, MAINE 04102. Contact Jon Dykstra, <Dykstra.jon@gmail.com>, 207-423-2150 https://www.mainemineralclub.org/annual-gemshow.View our event on Facebook: https://www.facebook.com/events/1460720690747478/

**CANCELLED** April 25-26, 2020 - Franklin, NJ - Annual Franklin Mineral Show Sponsored by NJESA, and the Franklin-Ogdensburg Mineralogical Society {FOMS}. Held in the Fluorescent Mineral Capital of the World. For More Information: http://fomsnj.org/Events.aspx or http://njesa.org/index.html Dealers: http://njesa.org/dealer-information.html

**CANCELLED** May 2, 2020 - Baltimore, MD - Rock Swap 2020 sponsored by Natural History Society of Maryland.

**STILL SCHEDULED** May 23, 2020 - Fairless Hills, PA - The Earth Science Show & Sale, Presented by The Rock & Mineral Club of Lower Bucks County, PA. Christ United Methodist Church, 501 Wistar Road, Fairless Hills, PA; 9:00 AM to 3:00 PM; Rocks, Minerals, Fossils, Lapidary Arts, Jewelry & All Things Related to the Earth Sciences; Admission: \$2.00 Donation, Children 12 & Under Free; Dealers: 6' Table \$20 - 1/2 Table \$10, Registration Required; Send Check to: Brian Schwab, 539 Sycamore Ave., Croydon, PA 19021, Payable to RMCLBC. For Additional Information call: 215-788-3993 and Leave Message for Brian to return the call.

**STILL SCHEDULED** June 6, 2020 - Macungie, PA - 2020 Spring Mineralfest sponsored by the Pennsylvania Earth Science Association. Saturday, 6 June 2020 8:30 AM to 3:00 PM Macungie Memorial Park, Macungie, PA. One hundred tables overloaded with minerals, fossils, gems, jewelry, crystals and geodes from six continents - and possibly from outer space. *A family-oriented event - younger attendees encouraged.* Held rain or shine.



### **Member's Finds**

Photos from "Long Ago" times....



This was Polly Zimmerman at the Limestone Quarry in Mandata, PA in Sept (?) 2007 looking for blue celestite crystals -- she was very successful and found a lot of them.



Bob Davidson digging out a nice Rutile xl at Graves Mountain, GA in March 2008.



Harry and Tina League at Hunting Hill Quarry in Rockville, MD in April 2009.



Jim White at Rockville Quarry April 2009.

# ROCK TALK

# APRIL 2020



#### The Southern Maryland Rock and Mineral Club

Meetings take place on the 4<sup>th</sup> Tuesday of each month at 7:00pm

Clearwater Nature Center, 11000 Thrift Road, Clinton, MD.

For More information, call:

(301) 297-4575

We're on the web: SMRMC.ORG

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#### **ITEMS WANTED/FOR SALE**

**For Sale** – Virginia Unakite slabs (approx  $\frac{1}{4}$  inch thick) –  $\frac{50.50}{20}$  per square inch (this is half off regular price). Call Dave (240) 427-7062.

**For Sale** – SMRMC <u>Only 4 remaining</u> t-shirts for sale: size small (1) at \$9.00; and large (3), also at \$9.00 each Contact Tina @htleague@comcast.net