

hypothesized to have been triggered by exposure to high temperature and humidity during a one-day photo shoot in 1936. Only one of the panels was photographed. The one not photographed showed much less extreme degradation.

- A look at the varnish residues present in craters caused by loss of lead soap aggregates. Because the varnish was found in the crater it is suspected that the varnish was applied after formation and loss of the lead soap aggregate and thus likely not artist applied.
- Use of aqueous gels for the removal of inorganic salt crusts (a form of metal soap degradation). A visually disturbing grey haze was found following devarnishing. This layer was found to be insoluble in organic solvents. Testing of Pemulen TR2 and methyl cellulose gels with chelators was found to be effective at solubilizing the salt crust.
- An oxylate crust that was best removed mechanically.
- Small white spots on a 17th-century painting initially thought to be due to abrasion from past cleaning were analyzed and found to be caused by lead soap aggregates that had been decapitated. This finding influenced a more conservative approach for the treatment.
- A look at calcium and lead soaps present on two paintings in architectural settings. It is thought that some of the components which lead to the formation of the calcium soaps originated in the lead-based adhesive and the plaster wall. The formation of the metal soaps resulted in areas of cleavage and paint delamination.
- A look at the how metal soap formation may affect the ratio of relative amounts of palmitic and stearic acids present in a medium and how this may affect identification of drying oils. The P/S ratio is often used to identify the oil source in paint binders.
- Georgia O’Keeffe paintings show micro-protrusions. O’Keeffe noted the presence of small pinpoint losses in paintings during her lifetime suggesting that the soap formation process began very early in the paintings’ history. Multiple angles of UV light with a fixed camera were used to create a 3-d morphology of the surface that will allow monitoring of changes to the surface.
- metal soaps identified in paintings by James Ensor resulting in protrusions and dry and brittle paint layers.
- use of non-invasive reflection mid-FTIR spectroscopy to identify metal oxylates in-situ.
- metal soaps identified in paintings by Pierre Soulages resulting in delamination of paint layers, lifting paint layers, softened under layers, and liquid drips and exudations.
- metal soaps added to modern oil paint on purpose as dispersion agents, stabilizers, and extenders.

“Louvre to Restore da Vinci’s ‘St. John the Baptist’,” *The Wall Street Journal*, 01/13/2016

The Louvre will begin restoring Leonardo da Vinci’s “St. John the Baptist” (1508-19) in the coming weeks, leaving just two of the museum’s five masterpieces by the Renaissance giant untouched by restorers, including its most famous occupant: the “Mona Lisa.”

The museum says layers of varnish applied on the portrait of an intriguingly young and androgynous St. John the Baptist over the past five centuries to protect it have grown opaque, masking important parts of the painting, including the cross he bears and the pelt he wears. “The details are in the shadow now, while 10 or 20 years ago they were more visible,” says Vincent Delieuvin, chief conservator for Italian renaissance art at the Louvre.

The attempt to enliven one of the most representative examples of da Vinci’s techniques is making some art experts nervous, however, after the firestorm that followed the French museum’s restoration of another of the artist’s works in 2012.

In addition to showing off the artist’s technique, the painting holds historical significance. It was one of the few the master kept with him as he moved to different cities in Italy and, in his later years, to the court of French King Francis I. Mr. Delieuvin says many documents, from drawings and sketches to other paintings, show that da Vinci worked on “St. John” for years. The Louvre hired well-known master restorer Regina Moreira to handle the restoration process.

“Big Meaning in the Minuscule: Art Museum Explores Conservation,” *Cincinnati.com*, 01/28/2016

After the before and before the after. That’s where Serena Urry lives. As chief conservator for the Cincinnati Art Museum, Urry is the line between phases in a painting’s life. A map to take filthy to fine. Crumbling to composed.

Urry’s work is key to the preservation, the presentation of the museum’s nearly 66,000 artworks, some dating to the time when we rocked the Cradle of Civilization. Her workshop, however, is hidden, kept behind the curtain. Yes, an actual curtain. The steely gray one you don’t really notice as you stroll into the Great Hall from the lobby.

But not anymore. Starting Tuesday, you can’t miss her: She’s the star of the exhibit, “Conservation on View: Zaragoza’s Retablo of St. Peter.” For the first time in her 25-year career, Urry cleans paintings in front of the curtain, restoring the golden glimmer to the 18 painted panels of a 600-year-old Spanish altarpiece. Standing 10 feet tall and nine feet wide, the work also represents one of the largest conservation projects in the museum’s history.

“Frost Art Museum Will Display Giant Roman Jigsaw Puzzle,” *The Examiner*, 01/29/2016

The Lod Mosaic, a 1,700-year-old Roman mosaic from the Eastern Roman Empire in what is now Israel, will go on display in the Patricia & Phillip Frost Art Museum at Florida International University on February 10, 2016.

Discovered in 1996 by construction workers who were digging to widen a road, the third-century CE mosaic was rescued by the Israel Antiquities Authority (IAA). Entitled “Predators and Prey,” it is notable for its subject matter, its size, and its outstanding degree of preservation.

The mosaic covers an area of about 6,996.5 square feet and was divided into 30 “fragments” for relative ease of handling and study. Seven of these fragments, totaling 344.4 square feet, have traveled the world during the past three years.

Featured are indigenous animals coexisting with ferocious wild creatures such as lions and tigers, an elephant, a giraffe, an Asian water buffalo, plus marine life, a sea monster, and merchant ships. Remarkably, the mosaic contains no images of human beings or deities.

Archaeologists have calculated that it contains more than two million tesserae. Archaeologists believe the Lod Mosaic was created as the floor of a large audience room, in a grand villa owned by a wealthy Roman merchant whose trade route crossed between Jerusalem and the Mediterranean.

“Nainital-Based Conservator Knighted by Italy,” *Times of India*, 03/08/2016

Anupam Sah, a Nainital-based art conservationist who has restored numerous heritage properties, including monuments, cities, sculptures and manuscripts, has been knighted by Italy for “outstanding work in the field of restoration techniques”. The letter from the government of Italy, dated February 24, 2016, announces that Sergio Mattarella, the country’s president, will confer ‘Knight of the Order of the Star of Italy’ on Sah, who at present is head of Art Conservation, Research and Training, Chhatrapati Shivaji Maharaj Vastu Sangrahalaya -- formerly known as the Prince of Wales Museum.

Sah, 46, is also a founder of Himalayan Society for Heritage and Art Conservation (HIMSHACO), a not-for-profit organization based in Nainital. Apart from conservation of various heritage properties in nations across the globe like Germany, France, Italy, England, Sri Lanka, Indonesia, Nepal, Scotland, Sah’s projects in India, where he has worked in almost every state, include the one in Raghurajpur village in Puri district, Odisha.

After convincing the centre and state governments to link art conservation with development, it was declared a heritage village in 2003.

“Austrian Museum Raises Funds to Restore Damaged Artworks,” *Ahram Online*, 02/05/2016

Would you pay to see art that’s broken, mouldy or eaten by worms? Vienna’s famous Leopold Museum sure hopes so. The prestigious home of Gustav Klimt and Egon Schiele is displaying damaged artworks to raise funds for their restoration.

Around 185 pieces by Austrian artists, ranging from turn-of-the-century paintings to Art Deco chairs and lamps, are part of the unconventional Hidden

Treasures exhibition. Some, like Robert Russ’s 1885 “Mill with Evening Sky”, reveal damaging tears in the canvas or heavily flaking paint. Other forlorn pieces of artwork include a delicate porcelain figurine with its head missing, and the panel of an oil painting by Cecil van Haanen fallen victim to hungry woodworms.

“Usually you go to the museum to admire works in perfect condition. Here, we are showing the dark side of our collection,” the Leopold’s new director, Hans-Peter Wipplinger, told AFP in a recent interview. Boasting around 6,000 pieces, the museum has gained global fame for its outstanding array of 19th and 20th-century Austrian art.

The museum needs a total of 370,000 euros (\$400,000) to restore the artworks -- a sum that largely exceeds the institution’s available funds. “That’s how I got the idea of finding patrons willing to finance the repairs,” Wipplinger explained. The exhibition, which runs until February 22, illustrates the spoils and damages an artwork can suffer over the years. “It’s also about showing the public all the work and technical know-how required to present a piece in mint condition,” Wipplinger said.

“How Cat Hair Brought Down a Pair of Art Forgers,” *Science*, 02/14/2016

Investigations into the artist responsible for modern works often have a specific goal: To figure out if the work in question is a forgery.

Bonnie Magness-Gardine manages the Art Theft Program at the Federal Bureau of Investigation in Washington, D.C. For many years, she and other investigators had seen innumerable forgeries of the work of Clementine Hunter, a self-taught and incredibly prolific African-American painter from Louisiana.

Many people tried to copy her distinctive folk-art style, but only two regularly succeeded: William Toye and his wife Beryl Ann Toye, a couple from New Orleans. They were so good at imitating Hunter’s style that “they got away with this for years,” Magness-Gardine says.

In 2009, the Federal Bureau of Investigation finally gathered enough evidence to confiscate the Toyes’ supposed Hunter collection, and during the raid they noticed that “they lived in a very modest house with approximately 30 cats,” Magness-Gardine says.

When forensic investigators analyzed the seized works, they found cat hair embedded in the paint—a characteristic not shared by Hunter’s authentic work. “That’s essentially what brought them

down,” Magness-Gardine says. William Toye pled guilty to art fraud in 2011.

“Colorful Cowboy gets some High-tech TLC,” *Smithsonian Insider*, 02/24/2016

What do a cowboy and a Corvette have in common? It’s not the opening of a joke, but rather a key to the current restoration of the Smithsonian American Art Museum’s vibrant outdoor sculpture “Vaquero,” by Chicano artist Luis Jiménez.

“Vaquero” is made of a plastic, acrylic urethane, which is typically used to make signs and some car bodies, like the Chevy Corvette Stingray. It is one of the more stable plastics and holds up really well outdoors,” explains Helen Ingalls, objects conservator at SAAM.

“Vaquero” is hollow inside. A woven fiberglass fabric inside the sculpture serves as a matrix to hold the resin. “Vaquero,” has stood outside the museum for more than 20 years enduring bird droppings, acid rain and city dust.

Treating “Vaquero’s” surface over the years “was a challenge because there weren’t a lot of precedents; there weren’t a lot of maintenance programs that dealt with outdoor sculpture made from plastic resin,” she says. “The main problem was the deterioration of the top clear layers that act as a first line of defense.

The solution: The sculpture was transported to Oberlin, Ohio where McKay Lodge Fine Art Conservation Laboratory will undertake “Vaquero’s” re-surfacing. McKay Lodge will work collaboratively with PPG Automotive Refinish, a company specializing in transportation and industrial coatings, to research and identify an appropriate coating to use on “Vaquero.”

The newer coating formulations that McKay Lodge is applying to the sculpture will last longer, withstand the elements much better and won’t require any maintenance—other than regular washing, something that makes Ingalls very excited.

“To Detect Fakes, Art Meets Science,” *The Wall Street Journal*, 02/24/2016

As the recently settled Knoedler & Co. art-forgery lawsuit made clear, even the trained eyes of art connoisseurs can have their blind spots. So some in the art market are turning to science for added reassurance, subjecting objects to tests more commonly associated with crime procedurals.

Still largely the province of laboratories at large museums and universities, and of a handful of consultants trained in that world, such reviews aren’t a magic bullet for authentication, experts

say. But they can flag inconsistencies that signal a forgery.

Last fall a fledgling art-forensics laboratory at State University of New York's Purchase College began testing works for the art trade. The work requires expertise in both chemistry and art history, along with an understanding of how art and artifacts are made.

With the counterfeits sold by the Knoedler gallery, tests of two supposed Robert Motherwell paintings dated 1953 and 1955 showed indications that an electric sander had been used on both surfaces—a technique the artist wasn't known to have employed. The analysis, conducted in 2008 by Massachusetts-based Orion Analytical LLC, one of the most prominent firms involved in such work, also detected pigments that weren't developed until the 1960s.

The paintings turned out to be among more than 30 counterfeit works Knoedler sold that were created by a man living in Queens, supplied by a Long Island art dealer who has since pleaded guilty to criminal charges.

"When science began to show that the experts were often wrong, that was really terrifying," said Jeff Taylor, an assistant professor of arts management at Purchase College who co-founded the lab there. The facility, launched in 2014, grew out of a popular Chemistry in the Arts course taught jointly by Stephen Cooke, an associate professor of chemistry, and Dr. Taylor, an art appraiser and historian who studies the art market and has an art-advisory business.

The lab now has about \$400,000 worth of testing equipment at its disposal. It offers pro bono services to public art collections such as the Hispanic Society of America, helping conservators document the materials of objects in their collection.

"Twelfth-Century Virgin Shows Her True Colours," *The Art Newspaper*, 02/25/2016

One of Russia's most important icons, thought to be beyond repair, is the focus of an exhibition at the Grabar Art Conservation Centre in Moscow following its restoration (until 26 February). Recent work on the medieval Bogolyubskaya Icon of the Mother of God, now in the Vladimir-Suzdal Museum in the city of Vladimir, revealed the piece's original full-length image of the Virgin with her arms outstretched towards Jesus.

The icon, dated to the late 12th century, is one of only around 30 surviving from the period; the Mongol invasions of

Russia, which began in the 13th century, destroyed much of the country's early Christian heritage. The icon had been described as an "archaeological ruin" by conservators who examined it in 1918.

It has had more than 20 interventions in its nearly 900-year history (the average for an ancient Russian icon is three). The latest saw Aleksandr Gormatyuk, a Grabar conservator, make the 200km journey from Moscow to Vladimir to work on the piece as it was deemed too fragile to travel. Layers of wax and resin were removed to reveal the original paint, which helped confirm that Virgin's face, clothing and hands were 12th-century. I

t was also x-rayed and 3-D scanned. "It's probably the first time 3-D scanning was used in the restoration of icons in Russia," Gormatyuk says.

"Major Restoration Projects Mark 50th Anniversary of Venice and Florence Floods," *The Art Newspaper*, 03/02/2016

To mark the 50th anniversary of the great Venice and Florence floods 1966, two US conservation organisations are collaborating on major art restoration projects in the two Italian cities.

The non-profit groups, Save Venice and Friends of Florence, will work together this year to restore a Tuscan egg-tempera painting on panel by the Master of Badia a Isola from 1315; a Madonna and Child Enthroned with Angels in the Galleria Palazzo Cini in Venice; and 48 drawings by Giovanni Battista Tiepolo from the Horne Museum in Florence.

On 4 November 1966, the River Arno burst its banks, sending dark muddy water thundering into the centre of Florence at 60 km per hour. More than 100 people died in the floodwaters and around 14,000 works of art were badly damaged or destroyed, including Giorgio Vasari's *The Last Supper*. The same day, high tides and rain-swollen rivers filled the Venice Lagoon to bursting. Floodwater raised the canals' level to a height of 6ft 4in, ruining works of art worth an estimated £3.2 billion.

Angeli del fango, the "mud angels", descended on Florence from all over the world to help clear up the city, rescuing almost 1,000 paintings, frescoes and sculptures. However, the display of international cultural solidarity also highlighted how unprepared and under-resourced the Italian government was.

Friends of Florence, which is based in Washington, DC, has raised and donated around \$10m for the preservation of art and architecture in Florence and Tuscany, contributing more than \$900,000

to renovate the Uffizi's Botticelli Rooms last year. Save Venice, which has its headquarters in New York, was born in response to the floods of 1966 so "it is fitting that we commemorate the anniversary with what we do best—restore cultural treasures", says Frederick Ilchman, the chairman of the organisation.

"Botswana: Tsodilo Hills Preservation Impresses U.S Envoy," *AllAfrica.com*, 03/08/2016

US ambassador to Botswana Earl Miller has applauded the Tsodilo community for their continued efforts of conserving the Tsodilo heritage site. Speaking in an interview after touring the Tsodilo hills, Miller said it was satisfying to see a community taking responsibility in preserving the rock paintings.

He said the United States Ambassadors Fund for Cultural Preservation has provided support for projects, which included training in the preservation of ancient art sites in Gaborone and at Tsodilo Hills. He also noted that the training in 2001 was the first AFCP project in Botswana and it included a two week rock art conservation workshop in Gaborone and onsite training in anticipation of Tsodilo becoming a World Heritage Site.

Programme director of the United States Ambassadors Fund for Cultural Conservation Martin Perschler said the conservation of the site was a clear sign that Botswana valued the heritage sites and that rock painting was an art form of communication.

"Spanish Castle is Spared from Collapse, but not Criticism," *The New York Times*, 03/10/2016

When the residents of Villamartin heard that the landmark castle near their small town in southern Spain was to be restored, they probably envisaged a thoughtful restoration of the medieval stronghold to something approximating its former glory.

Instead, they have been left with something that many feel more closely resembles a multilevel parking garage. The repair of Matrera Castle, perched on a ridge in the Andalusia region, has infuriated locals and provoked the ire of some conservators. Images of the castle before and after the restoration have recently fueled outrage and ridicule on social media.

The architect behind the restoration, Carlos Rojas, acknowledged that his results were not to everyone's taste. "I understand the criticism of local people

used to seeing the tower look a certain way, but the principal objective was to prevent the collapse of the structure.”

Mr. Quevedo Rojas said modern standards for restoring historic buildings discouraged efforts to make them look as they might have when first erected. “You have to distinguish and maintain the historical value and architectural integrity,” he said. “You can’t make the structure have the same appearance as the original. You can’t falsify the appearance. It has to be clear which parts are new and which are old.”

José María Gutiérrez López, the director of Villamartin’s small history museum, said critics were simply ill informed. Mr. Gutiérrez López, who has written a book about the castle and the history of its surroundings but was not involved in the repairs, expressed surprise at the negative attention it has received. “When there was the collapse in 2013, we couldn’t even get 100 signatures together to restore the building,” he said. “Now there’s been this restoration, there’s been an outcry. It makes me very frustrated.”

“Artificial ‘Nose’ Sniffs out Pollution to Protect Disney Art on International Tour,” *Phys.org*, 03/14/2016

Original drawings and sketches from Walt Disney Animation Studio’s more than 90-year history traveled internationally for the first time this summer. This gave conservators the rare opportunity to monitor the artwork with a new state-of-the-art sensor.

A team of researchers report today that they developed and used a super-sensitive artificial “nose,” customized specifically to detect pollutants before they could irreversibly damage the artwork. The researchers reported on their preservation efforts at the 251st National Meeting & Exposition of the American Chemical Society (ACS).

“Many pollutants that are problematic for human beings are also problematic for works of art,” says Kenneth Suslick, Ph.D. “The high sensitivity of artists’ materials makes a lot of sense for two reasons,” explains Suslick, who is at the University of Illinois at Urbana-Champaign. “Human beings are capable of healing, which, of course, works of art cannot do. Moreover, human beings have finite lifetimes, whereas ideally works of art should last for future generations.”

To protect valuable works of art from these effects, conservators enclose vulnerable pieces in sealed display cases. But even then, some artists’ materials may “exhale” reactive compounds that

accumulate in the cases and damage the art.

To counter the accumulation of pollutants, conservators often hide sorbent materials inside display cases that scrub potentially damaging compounds from the enclosed environment. But it is difficult to know precisely when to replace the sorbents.

Suslick figured he might have an answer. He had already invented an optoelectronic nose used largely for biomedical purposes, but it can’t sniff out the low concentrations of pollutants that damage works of art.

To redesign the nose with the aim of protecting artwork, he approached scientists at the Getty Conservation Institute (GCI). He proposed that his team devise a sensor several hundred times more sensitive than existing devices used for cultural heritage research. The collaboration took off, and the scientists built a keener nose.

“Legendary ‘Beast Jesus’ Restoration Gets Its Own Dedicated Arts Center,” *Art Net News*, 03/25/2016

A small Spanish town is doing its best to extend the Ecce Homo craze that saw thousands of tourists flock to Borja to see the perplexing amateur restoration of a church fresco.

The disastrous efforts of local resident Cecilia Giménez are now immortalized at the newly-opened Centro de Interpretación. Mayor Eduardo Arilla hopes the new art center will help sustain tourism related to the painting, which has waned since Beast Jesus first became a sensation in 2012, bringing thousands to the sleepy town.

Giménez, now 85, had attempted to restore Elías García Martínez’s damaged 1930 fresco, only to be ridiculed for the cartoonish, primate-like appearance of the altered work, which came to be known as Beast Jesus.

The new arts center contains 15 posters explaining the story of Ecce Homo and its unusual claim to fame, written in English, French, and Japanese. Giménez appeared at this week’s opening in a wheelchair, having recently broken her hip. Also on hand were several of Garcia’s grandchildren. “This is too much, my God, I don’t deserve all this,” said an emotional Gimenez at the opening ceremony.

In addition to providing a new revenue stream for the town, the Beast Jesus meme has led from everything from a music video and an opera to a documentary film.

As for Giménez, she’s come to terms with the much-maligned appearance

of her inadvertent creation, telling El Pais “sometimes, after seeing it for so long, I think to myself, son of mine, you are not as ugly as I thought you were in the beginning.”

“Egypt’s Museum of Islamic Art Regains its Allure after Two-Year Restoration,” *Ahram Online*, 03/27/2016

After two years of closing, Cairo’s Museum of Islamic Art will officially be inaugurated in April, Minister of Antiquities Khaled El-Enany announced Sunday during a tour of the museum to inspect restoration and rehabilitation works.

El-Enany pointed out that the “restoration and the opening of the museum embodies the collaboration efforts exerted on the local and international level to stand against any kind of terrorism that aims to erase Egypt’s distinguished identity and civilisation.” Elham Salah, head of the ministry’s Museums Department who escorted the minister during his visit, told Ahram Online that 95 per cent of the restoration works have been completed.

The façade, building and halls have been restored and new state-of-the-art security and lighting systems were installed. All the pedestals carrying large artefacts and display cases were also replaced.

The museum was damaged by a car bomb explosion in January 2014 targeting the adjacent Cairo Security Directorate on Port Said Street in Bab El-Khalq neighbourhood. The explosion blew a six-metre crater into Port Said Street and ripped into the façade of the two-storey museum building, whose second floor is shared with the National Library and Archives.

“When Art Falls Apart,” *Scientific American*, 04/01/2016

Conservators at museums and art galleries have a big worry. They believe there is a good chance the art they showcase now will not be fit to be seen in one hundred years, according to researchers in a project called Nanorestart.

Why? After 1940, artists began using plastic-based material that was a far cry from the oil-based paints used by classical painters. Plastic is also far more fragile, it turns out. Its chemical bonds readily break. And they cannot be restored using techniques historically relied upon by conservators.

So art conservation scientists have turned to nanotechnology for help. In the Nanorestart project (the idea is to use nanomaterials to restore art) a consortium

of 27 museums, universities, and chemical companies—financially supported by the European Union—began to tackle four tasks in 2015.

The first goal is cleaning contemporary art surfaces. Second is stabilizing canvases and painted layers. Third is removing unwanted modern materials. And fourth is figuring ways to enhance protection of the artworks.

With novel materials that function at the nanoscale, workers hope to penetrate the polymer networks that underlie artworks, remove the blemishes of degradation, and stabilize the remaining structures. A related project called Popart (Preservation of Plastic Artefacts in museum collections) developed spectroscopic and chromatographic analytic techniques for identifying the plastic components in the art, the first steps towards preserving them.

The researchers also tracked the ways in which those plastics degrade, an important step because degradation byproducts--gases, for example-- can also damage nearby objects in display cases. Cleaning these objects without harming them was also a major focus.

“Met Museum’s Broken Angel Reveals its Creator’s Methods,” *The New York Times*, 04/06/2016

Sometime late on July 1, 2008, for reasons still not completely known, a terra cotta relief of the archangel St. Michael by the Renaissance master Andrea della Robbia came loose from its place above a doorway at the Metropolitan Museum of Art and plunged to the stone floor.

The accident was unthinkable, but perhaps the warrior angel was presiding over his likeness: Instead of hitting front first or at an angle, which could have caused catastrophic damage, the blue-and-white lunette — 62 inches wide and 32 inches at its tallest point — landed flat on its back, in the wooden frame that encased it.

The glazed white head of St. Michael, one of the largest single parts of the work, broke loose and rolled to one side. But most of the pieces shattered by the fall remained together inside the frame. Now, after more than five years of study and work by the museum’s conservators and curators, all of those pieces have been put back together.

Along the path of reassembly, the museum learned many things it had never known about the relief. More significantly for art-historical scholarship, the museum also gained new insights into the working methods of the della Robbia studio in Florence.

But another lesson the accident taught, in the end, was how durable della Robbias were made to be, despite their humble, seemingly fragile clay origins. St. Michael’s head was completely unharmed after the fall.

“How Greed and Incompetence put Russia’s Heritage at Risk,” *The Moscow Times*, 04/14/2016

On March 15, 2016, Russia’s Federal Security Service (FSB) raided the Culture Ministry in Kitai-Gorod. Deputy Culture Minister Grigory Pirumov was arrested, along with other officials and the chief of the Baltstroi construction company.

The charge: embezzlement, in a scheme involving a number of priceless heritage sites. Konstantin Mikhailov, head of the Archnadzor activist movement — an organization which helps preserve and safeguard historical monuments -- is one of many activists and restoration experts who say that they have been sounding the alarm for years, and that the current case is just the tip of the iceberg.

Architect Grigory Mudrov says that he has witnessed cases where monuments were in better condition before restoration than after it. “Ninety percent of the conservation-restoration happening at historical buildings is actually just renovation-style reconstruction,” he says. He’s often seen some contractors adding modern elements such as suspended ceilings or linoleum flooring. “In general,” he says, “restoration has become part of the construction field.”

Art conservation experts, architects and activists are currently campaigning for more transparency and public participation in decisions made about historical restorations and preserving cultural heritage throughout Russia.

“In order solve the challenges the field is facing, we should be talking about dismantling the entire system,” says architect and conservation expert Natalya Dushkina. She and other experts in her field gathered to discuss the uncertain future of Russia’s cultural heritage last week. The atmosphere was grim — all participants have long been aware of the systemic problems and hope that that the Culture Ministry’s embezzlement scandal will serve as a wake-up call for both the government and the media.

An expert is a man who has made all the mistakes which can be made in a very narrow field.

Niels Bohr

“Stolen Dutch paintings recovered in Ukraine,” *BBC News*, 04/15/2016

Ukraine says it has recovered four paintings from a haul of 24 that was stolen from a gallery in the Netherlands more than a decade ago. The haul of 16th and 17th century paintings was worth €50,000 (£40,000; \$56,000) when stolen from the Westfries Museum in the city of Hoorn in 2005.

The four recovered works had been “in the possession of criminal groups”, Ukraine’s foreign minister said. Reports say they were recovered from Ukrainian ultra-nationalists. The museum said in December that two men, reportedly from a Ukrainian nationalist militia, had presented a picture of one of the paintings to the Dutch embassy in Kiev.

At the time, Dutch media reported that the men had said they had found the entire stolen collection and demanded millions of euros for the haul’s return. Ukrainian authorities gave no more details on how the four paintings were recovered.

Vasyl Grytsak, the head of Ukraine’s state security service, said the first painting was recovered in early March, followed by a second in early April and two more on Thursday. “A preliminary examination has determined they are authentic,” Mr Grytsak told a press conference. Ultra-nationalist Ukrainian militia groups are fighting a pro-Russian insurgency in parts of eastern Ukraine. The conflict is estimated to have killed more than 9,200 people since April 2014.

“Why is India’s Taj Mahal Turning Green?,” *BBC News*, 25 May 2016

An invasion of the insect called Chironomus Calligraphus (Geoldichironomus) is turning the Taj Mahal green, says environmental activist DK Joshi.

Mr Joshi has filed a petition in the National Green Tribunal - a special tribunal set up by the government to deal with environmental disputes - saying that the “explosive breeding” of the pests in the polluted Yamuna river is marring the beauty of the monument.

“Fifty-two drains are pouring waste directly into the river and just behind the monument, Yamuna has become so stagnant that fish that earlier kept insect populations in check are dying. This allows pests to proliferate in the river,” said Mr Joshi.

The stains the bugs leave on the marble are washable and workers from the Archaeological Survey of India (ASI) have been trying to scrub the walls clean, but Mr Joshi says frequent scrubbing can take the

sheen off the marble. He says the problem has a simple solution - just clean up the Yamuna.

On Monday, Uttar Pradesh Chief Minister Akhilesh Yadav ordered officials to “trace the factors behind the problem and find a solution”. To restore the monument’s beauty, the ASI has been applying “mud packs” on its walls to draw out the pollutants.

The mud-pack is based on a traditional recipe used by Indian women from ancient times to restore a natural glow to their faces. A layer of fullers earth - a type of lime-rich clay - mixed with water is applied over the walls and left on for 24 hours or more to dry. Once it dries, the mud is removed and the surface is washed with distilled water to remove impurities.

The marble mausoleum had been given this treatment several times in the past: in 1994, 2001, 2008 and 2014.

“King Tut’s Blade Made of Meteorite,”
Live Science, 05/31/2016

King Tut was buried with a dagger made of an iron that literally came from space, says a new study into the composition of the iron blade from the sarcophagus of the boy king.

Using non-invasive, portable X-ray fluorescence spectrometry, a team of Italian and Egyptian researchers confirmed that the iron of the dagger placed on the right thigh of King Tut’s mummified body has a meteoric origin. The team, which include researchers from Milan Polytechnic, Pisa University and the Egyptian Museum in Cairo, detailed their results in the journal *Meteoritics and Planetary Science*.

The study shows the ancient Egyptians attributed great value to meteoritic iron for the production of precious objects, possibly perceiving those chunks of iron falling from the sky as a divine message. The most ancient Egyptian iron artifacts, nine small beads excavated from a cemetery along the west bank of the Nile tomb in Gerzeh and dated about 3200 BC, are also made from meteoritic iron hammered into thin sheets.

The dagger blade is not the only celestial object found in the boy king’s tomb. His pectoral, or necklace, features an scarab which is Libyan desert silica glass. The glass was produced by the impact on the sand of a meteorite or comet.

Such natural glass exists only in the remote and inhospitable Great Sand Sea of Egypt — the Western Desert. In order to produce the scarab, the ancient Egyptians would have had to trek across 500 desert miles.

“X-Rays Reveal 1,300-Year-Old Writings Inside Later Bookbindings,”
The Guardian, 06/04/2016

Medieval manuscripts that have been hidden from view for centuries could reveal their secrets for the first time, thanks to new technology.

Dutch scientists and other academics are using an x-ray technique to read fragments of manuscripts that have been reused as bookbindings and which cannot be deciphered with the naked eye. After the middle ages manuscripts were recycled, with pages pasted inside bindings to strengthen them. Those fragments may be the unique remains of certain works.

Dr Erik Kwakkel, a medieval book historian at Leiden University, said, “Every library has thousands of these bindings, especially the larger collections. If you go to the British Library or the Bodleian, they will have thousands of these bindings. So you can see how that adds up to a huge potential. It’s really like a treasure trove. It’s extremely exciting.”

Access to such “hidden libraries” has been made possible by macro x-ray fluorescence spectrometry (MA-XRF), which allows pages to be read without removing the bookbinding.

Professor Joris Dik, of the Delft University of Technology, described the potential for finding new material with clues to the past as “massive”. The technology does not just make hidden texts visible, but legible.

Now the technology has proved to be “equally efficient in the visualisation of hidden medieval inks,” he said. “A thin beam of x-rays is used to scan the object, charting the presence and abundance of various elements below the surface. That is how iron, copper and zinc, the main element constituents of medieval inks, could be viewed, even when covered by a layer of paper or parchment.”

“Is an Eakins Hiding an Eakins?: Painting, Mystery, Detective Story,”
The Philadelphia Inquirer, 06/14/2016

What if one Eakins is hiding another Eakins? The *Bibliophile* is a painting by Susan Macdowell Eakins, wife of the celebrated Philadelphia painter Thomas Eakins. An accomplished painter, Susan had studied with Thomas at the Philadelphia Academy of Fine Arts. The *Bibliophile* is in the collection at Bryn Mawr College.

Now a graduate student in the Winterthur/University of Delaware

program in art conservation has detected, beneath the surface, a separate painting. It’s natural to ask: Who started the painting underneath? Was it Thomas Eakins?

While no one is exactly saying yes, this painting has become the subject of a fascinating detective story. Gerrit Albertson is a graduate student at the Winterthur/University of Delaware program in art conservation. As part of the graduate program, students must study paintings that may have challenges for conservation. Among three paintings he studied in his second year, Albertson got *The Bibliophile*.

Albertson went to work, first doing old-fashioned research followed by electron microscopic analysis which suggested that different white pigments had been used in the top and bottom layers of the canvas — which could suggest two different artists were at work.

Albertson contacted John Delaney, senior imaging scientist, and Kate Dooley, research scientist, at the National Gallery of Art in Washington, DC. Delaney suggested that they try hyperspectral reflectance spectroscopy in the reflective near-infrared range.

Beneath the seated reader, there is an unfinished, sketchy-looking painting of a half-length male figure. The head is clearly visible in the spectroscopic images. Exciting.

But Albertson went further. At the Hirshhorn Museum in Washington, D.C., at the Pennsylvania Academy of Fine Arts, and at Bryn Mawr, he examined some old palettes associated with or once used by Thomas Eakins. Albertson analyzed the paints, and they corresponded pretty well to the paints in the lower layers of the canvas. And he found that the specific white pigment Eakins used was different from the white his wife used. And guess what? Her white is found in *The Bibliophile*, while his is found underneath.

Albertson e-mailed a hyperspectral reflectance image to Kathleen A. Foster, an Eakins scholar and senior curator of American art and director of the Center for American Art at the Philadelphia Museum of Art — and “she did not feel comfortable making an attribution based on this image alone.”

Neither does Albertson: “I can only say that I wouldn’t rule Thomas Eakins out.” How can we ever know for sure? Maybe we never will, says Albertson — unless some more certain link surfaces somewhere. Albertson writes that there is “no substitute for closely looking at an actual painting.”