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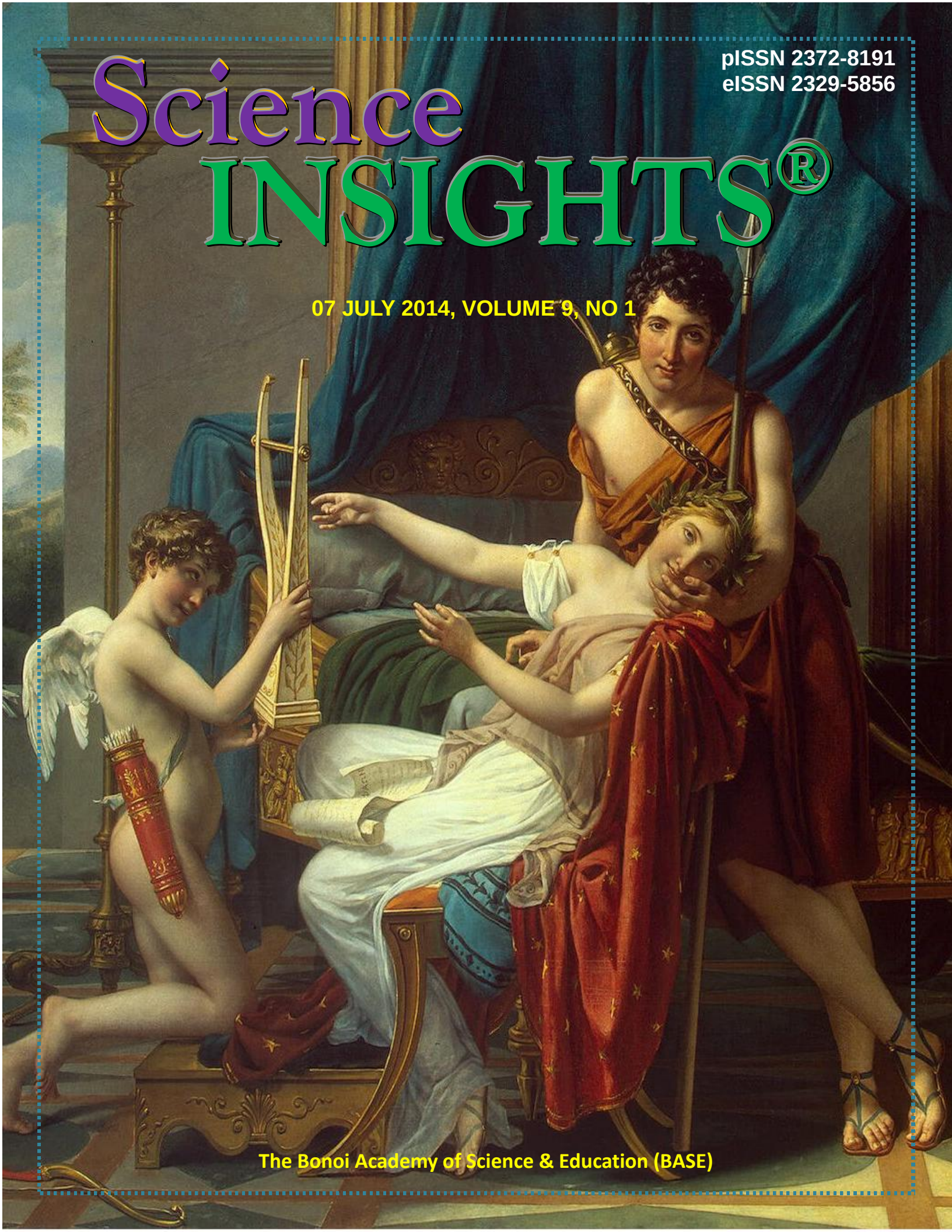

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BASE

THE BONOI ACADEMY OF SCIENCE & EDUCATION

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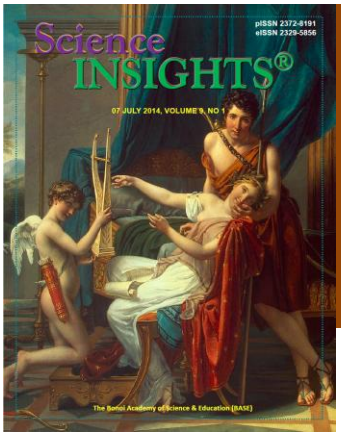

COVER
Among the Greek literature stands the great figure-Sappho. There is an inescapable fact that Sappho may have been the greatest poet who ever lived. In antiquity, Sappho was commonly regarded as the greatest, or one of the greatest, of lyric poets. Today, Sappho has set a standard for poetry that has never been exceeded. The work of Sappho has been widely admired and imitated. See page 222.

Image: BASE illustrating group

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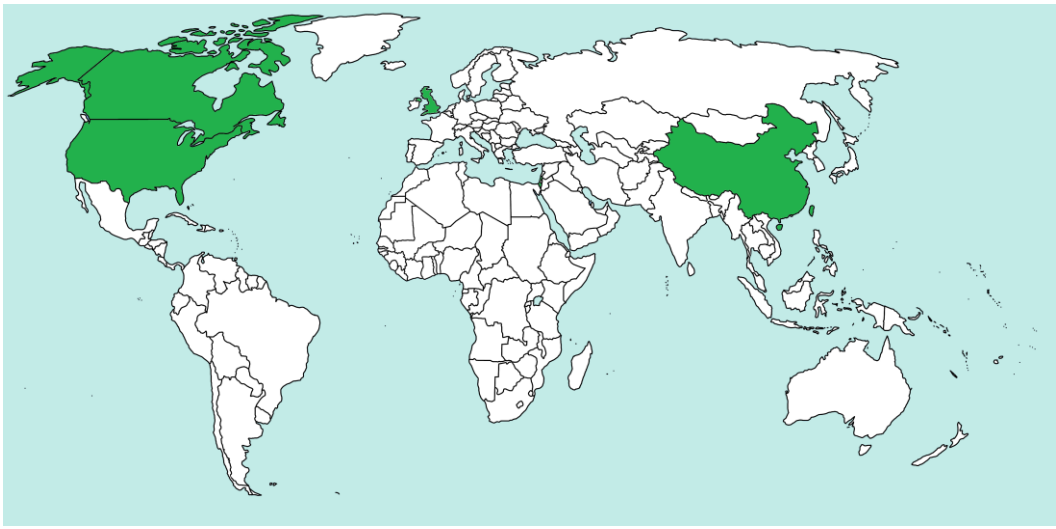
Love the Wave
Love the Earth

Washington DC, USA

Early Human Skulls from the Spanish 'Pit of the Bones'

The name of the cave may sound bleak - Sima de los Huesos, Spanish for "Pit of the Bones" - but the site in northern Spain's Atapuerca mountain range is providing a wondrous peek into a remote period in the history of early humans. Scientists on Thursday described an astonishing collection of 17 fossil skulls unearthed in the cave dating from about 430,000 years ago of an extinct human species closely related to the Neanderthals who later prospered across Europe and Asia from roughly 250,000 to 40,000 years ago. The skulls, reassembled from jumbled fragments from a small chamber deep within the cave, are the oldest known fossils to show clear Neanderthal features in the skull, although the scientists stopped short of calling them actual Neanderthals. The site did not yield just skulls. The scientists have pieced together skeletons of at least 28 individuals, Arsuaga said, mostly young adults and teenagers but with a few older adults and children. Researchers have been conducting excavations at the location - designated a UNESCO world heritage site - over the past four decades and previously described some of the skulls and other remains. There has been a spirited debate about the age of the fossils and the precise species they represent. The researchers did not assign them to any specific species, noting genetic differences from Neanderthals - formal name Homo neanderthalensis - as evidenced by DNA recovered from one of the Sima fossils.



They also said the skulls were not representative of another species that lived at the time, Homo heidelbergensis, because of jawbone differences. The scientists found Neanderthal-like characteristics in the skulls as well as features associated with more primitive humans. The Sima individuals lived during the Middle Pleistocene, a span of about half a million years for which scientists are seeking a better understanding of human evolution. The skulls showed that the earliest changes in the Neanderthal lineage occurred in the teeth, jaw and face, with those characteristics related to a specialization in chewing, perhaps related to meat eating. The skulls retained some primitive traits like a smaller brain case. The Neanderthal trait of an elongated and rounded brain case appeared later. Neanderthals are the closest extinct relative to our species, Homo sapiens, and disappeared after early modern humans first trekked into Europe from Africa. Genetic evidence shows there was inter-breeding between Neanderthals and Homo sapiens. The researchers used six sophisticated techniques to establish the age of the Sima fossils, which previously had been estimated as being roughly 530,000 to 600,000 years old, dates that had complicated the question as to the species involved.■

Calgary, CANADA

New Record for Earth's Farthest North Spring

A frozen river in the Arctic desert recently led scientists to a remarkable find: a spring gushing from a deep gully on Canada's Ellesmere Island. The unnamed bubbler is the farthest north spring ever found. Spotted near Otto Fiord on the island's west coast, the roaring spring emerges from a deeply carved mountainside almost 1,000 feet (300 meters) above the ice-filled river. But it's more than location that makes this Arctic spring so surprising - its incredible flow is rare in the polar latitudes. So much water emerges from the spring that it has filled the river valley below with ice. The strange Ice River, as it's informally called, led researchers to the spring, said Grasby, a geologist with the Geological Survey of Canada, a division of Natural Resources Canada in Calgary, Alberta. The river valley is completely choked with ice even though there are no glaciers nearby, the researchers said. Also, the entire area is a polar desert, with only 2.5 inches (64 millimeters) of rain and snow each year. But only the river has ice. The surrounding rock is barren. The discovery solved the river mystery: The spring water freezes in the river during winter. It took a few more years to figure out where the water might be coming from. Cascading Arctic springs are few and far between because thick blankets of permafrost (permanently frozen ground) usually block groundwater from escaping to the surface. The Ice River spring flows at 26 gallons to 132 gallons (100 to 500 liters) per second, even in winter, when air temperatures drop below minus 60 degrees Fahrenheit (minus 51 degrees Celsius),

according to monitors Grasby placed in the spring. Springs elsewhere on Ellesmere Island are mere dribbles in comparison, about 2 gallons (8 liters) per second. Melting permafrost couldn't supply enough water to feed the Ice River spring, and the spring water is too salty to come from permafrost, the researchers discovered. Nor could the annual rain and snowfall feed the vigorous spring. Instead, the researchers think glacial meltwater travels underground from distant mountains, then hits underground faults that intersect beneath the spring. Original article at Live Science.■

London, UK

Scientists Find 6,200-Year-Old Parasite Egg

In a skeleton more than 6,200 years old, scientists have found the earliest known evidence of infection with a parasitic worm that now afflicts more than 200 million people worldwide. Archaeologists discovered a parasite egg near the pelvis of a child skeleton in northern Syria and say it dates back to a time when ancient societies first used irrigation systems to grow crops. Scientists suspect the new farming technique meant people were spending a lot of time wading in warm water - ideal conditions for the parasites to jump into humans. That may have triggered outbreaks of the water-borne flatworm disease known as schistosomiasis. People can catch the flatworm parasite when they are in warm fresh water; the tiny worms are carried by snails and can burrow into human skin. After growing into adult worms, they live in the bladder, kidneys, intestines and elsewhere in the body for years. The parasites can cause symptoms including a fever, rash, abdominal pain, vomiting and paralysis of the legs. These days, the disease can be easily treated with drugs to kill the worms.■

Washington DC, USA

Where Life Is – the Search for a Planet like Ours

Residents of the Pacific Northwest sometimes refer to the region as "God's Country," not for the ceaseless rain that soaks the land from October until May, but for those few glorious summer months when the sun emerges from behind the clouds and the world bursts forth with life. On one such morning, August 3, 2010, dozens of the world's top planetary scientists met in the back room of the Talaris Conference Center to contemplate the origins of life on Earth and elsewhere. Talaris lies just a half-mile east of the University of Washington, where Victoria Meadows serves as director of the astrobiology program. The conference center is situated amid 18 acres of rolling lawns dotted with Douglas firs and veined by meandering streams, and as Meadows drove to the conference that morning, she was surrounded by evidence of her planet's lush habitability. She didn't need a telescope to see it; it all was right there. This was the first day of a conference that had come to be called "Revisiting the Habitable Zone," which Meadows had spent the last several months organizing. Many of her guests were members of the Virtual Planetary Laboratory, known by its acronym VPL, the project Meadows founded at the turn of the millennium and for which she has since secured more than $13 million in NASA funding. VPL's members hail from places as far flung as Sydney and Mexico City, and conferences like these offer them a rare opportunity for them to convene in physical space. It is an interdisciplinary team, with astronomers and physicists, oceanographers and geologists, chemists and biologists. Diverse though their specialties may be, they have all dedicated themselves to understanding the delicate and complex mixture of factors that can make or break a planet's habitability. It is a cryptic recipe, and much remains to be deciphered, but the essential ingredient, they would all agree, is water. On Earth, the seeds of life were sown beneath the seas, some three-and-a-half billion years ago, shortly after the seas themselves had settled and pooled. Even in the planet's driest deserts, not a single living thing has been found that can survive without water. So when the 38 scientists gathered in Seattle to answer the question, "What makes a planet habitable?" the riddle they really sought to solve was, "What makes a planet's surface suitable for water?" The answer is complicated, but perhaps the simplest variable determining whether water will accumulate on a planet is distance - specifically, the distance between a planet and the star it orbits.

Our own solar system is a case in point. Venus is a planetary Icarus, a cautionary illustration of the perils of orbiting too close to the Sun, where torrid heat long ago dissolved any liquid water that may have once been present.while water has been detected in the atmosphere of distant Neptune, it is frozen solid, preventing organic compounds from intermingling and giving rise to life. And then there is Earth, our home, traveling around the Sun within a range of space that is neither too hot nor too cold, a Goldilocks zone where water flows and life thrives. Around virtually every star in the sky, there is a ring of temperate space, and its borders and breadth vary in accordance with the size and brightness of the star. Scientists refer to this area as the "habitable zone." It was precisely this habitable zone that Meadows and her colleagues wanted to revisit when they gathered on that warm summer day in Seattle. They were particularly interested in mapping the habitable zones of distant stars, the best places to look for planets with life. The search for exoplanets, shorthand for extra-solar planets, those that orbit stars beyond our Sun, has gathered momentum in the intervening years. Space-based telescopes have been launched into orbit, designed to detect exoplanets hundreds of light-years away. Giant telescopes on the surface of the Earth have also joined the search. In February, NASA announced that its Kepler Space Telescope had verified the existence of an additional 715 new exoplanets, bringing the total to 1,768. Of those, 20 have been found in the habitable zone. By April, scientists had found Kepler-186f, a planet-so Earth-like they described it as a "first cousin." The harder we look, the more familiar the galaxy grows. The discoveries have rendered science writers dizzy. From *The New York Times* last year: "The known odds of something or someone living far, far away from Earth improved beyond astronomers' boldest dreams."■

Chengdu, CHINA

How Ancient Sea Reptiles Swam

During the Mesozoic, 252-66 million years ago, the seas were ruled by a variety of marine reptiles. One of the earliest groups were the nothosaurs, voracious semi-aquatic hunters with elongate bodies and paddle-like limbs. They were the top predators of the Triassic coasts, some 245 million years ago. Their mode of swimming has long been debated: did they row themselves along with a back-and-forth motion of their limbs, or did they 'fly' underwater, sweeping their forepaddles in a figure-eight motion like a modern penguin? Scientists from the University of Bristol and colleagues in China studied trackways formed on an ancient seabed which were recently discovered in Yunnan, southwest China. The tracks consist of slots in the mud arranged in pairs, and in long series of ten to fifty that follow straight lines and sweeping curves. The size and spacing of the paired markings indicate that they were created by the forelimbs of nothosaurs, representing animals ranging in size from over 3 metres to less than a metre in length They demonstrate that that these reptiles moved over the seafloor by rowing their forelimbs in unison, the first direct evidence of how these creatures propelled themselves in the water. Two types of nothosaurs, the large *Nothosaurus* and the diminutive *Lariosaurus*, known from complete fossil skeletons from the Triassic of southern China, are the likely trackmakers. Professor Qiyue Zhang from Chengdu Center of China Geological Survey, leader of the research, said: "We interpret the tracks as foraging trails. The nothosaur was a predator, and this was a smart way to feed. As its paddles scooped out the soft mud, they probably disturbed fishes and shrimps, which it snapped up with needle-sharp teeth." The tracks come from localities around Luoping in Yunnan, a well known site of excep-

tional fossil preservation that has yielded thousands of exquisite fossils of sea creatures, and occasional plants and small terrestrial animals blown in from the nearby islands.■

Jerusalem, ISRAEL

Crusade-Era Seal Discovered in Jerusalem

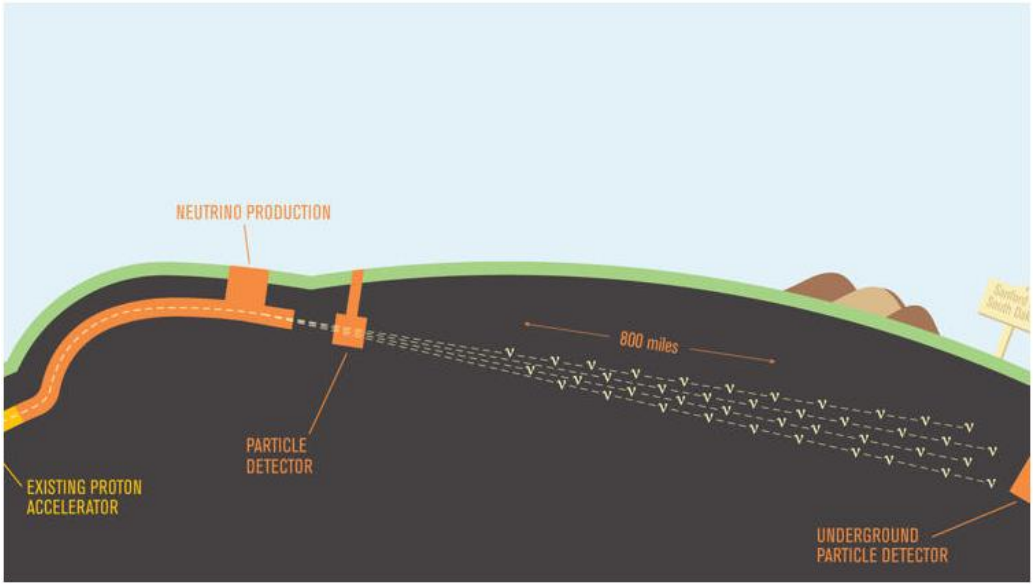
A rare Crusade-era lead seal used to secure a letter was uncovered in an ancient farmstead in Jerusalem, the Israel Antiquities Authority announced on May 27, 2014. The 800-year-old seal was likely once fixed to a document delivered to the farm from a sprawling cliffside monastery in the Judean Desert that was founded by Saint Sabas ("Mar Saba" in Aramaic) and once housed hundreds of monks. "This is an extraordinarily rare find, because no such seal has ever been discovered to date," Benyamin Storchan and Benyamin Dolinka, excavation directors from the Israel Antiquities Authority, said in a statement. This type of ancient seal was also known as a bulla in Latin. It consisted of two blank lead disks that would have been hammered together with a string between them. Opening the letter would cause obvious damage to the bulla, which was intended to discourage unauthorized people from breaking the seal. One side of the seal bears the image of the bearded Byzantine-era Saint Sabas, who is wearing a himation (essentially a Greek version of a toga), brandishing a cross in his right hand and perhaps holding a copy of the gospel in his left hand. The oth

er side of the seal is etched with a Greek inscription, translated as: "This is the seal of the Laura of the Holy Sabas." (The monastery was also called the "Great Laura" of Mar Saba. A laura, or lavra, is a type of Orthodox Christian monastery that has a cluster of caves for hermit monks.) "The Mar Saba monastery apparently played an important role in the affairs of the Kingdom of Jerusalem during the Crusader period, maintaining a close relationship with the ruling royal family," Robert Kool, a researcher with the Israel Antiquities Authority who examined the seal, said in a statement. "The monastery had numerous properties, and this farm may have been part of the monastery's assets during the Crusader period." The seal was uncovered during excavations in 2012 in southwestern Jerusalem's Bayit VeGan quarter. The farm site was established during the Byzantine period (5th–6th centuries A.D.) and resettled during the Crusader period (11th–12th centuries A.D.). A document in the archives of the Church of the Holy Sepulcher in Jerusalem refers to a farming settlement known as Thora that was sold to the Mar Saba monastery in 1163–1164. The location of that farm was lost to history, but the Mar Saba seal could link the recently excavated farm to Thora, explained Storchan and Dolinka in a statement.■

Washington DC, USA

Physics Panel to Feds: Beam Us up Some Neutrinos

The U.S. should build a billion-dollar project to beam ghostlike subatomic particles 800 miles underground from Chicago to South Dakota, a committee of experts told the federal government Thursday. That would help scientists learn about these puzzling particles, called neutrinos, which zip right through us. The proposed invisible neutrino beam would be the biggest U.S. particle physics projects in many years, said panel chairman Steven Ritz of the University of California, Santa Cruz. Still, it would be much smaller than Europe's Large Hadron Collider, which found the critical Higgs boson. The neutrino beam was one of the top big-money projects the scientific panel suggested in a list of priorities for federal particle physics research. Other big projects included improvement of the European collider and the creation of a Japanese subatomic particle smasher. If approved and funded, the neutrino beam would take about 10 years to build and could run for another 20 years, experts said. "What CERN (the European collider operator) did for the Higgs boson, we want to do with the neutrino," said Joe Lykken, a particle theorist at Fermi National Accelerator Lab in Chicago. That lab would create the beam and aim it at an old mine in Lead, South Dakota. There, scientists hope a 50,000-ton detector would be able to spot an incredibly minute fraction of the particles. Tiny and nearly mass-less, neutrinos are everywhere. About 100 trillion zip through us harmlessly each second. They were created by the Big Bang. They also form in the sun and our own bodies, but they are so fast and small that scientists have barely detected them for study. "Of the known particles, the neutrinos as a group are the most oddball," Ritz said. Neutrinos are a



group because they come in three types, or "flavors," and they can shift from one type to another. Scientists don't quite know why, Lykken said. If a neutrino is eventually beamed from Chicago, "it starts out as a chocolate milkshake, but it's partly strawberry by the time it gets to South Dakota," Lykken said. He added, "You study the oddball in order to get insights into everything else." Neutrinos could give scientists clues about the mysterious "dark matter" of outer space and other "weird astrophysical phenomena," said California Institute of Technology physicist Sean Carroll, who wasn't part of the scientific panel.■

Shanghai, CHINA

China's Comac Set to Deliver First Passenger Jets

A state-owned aircraft maker said Wednesday it is ready to deliver China's first homegrown regional airliner and should complete a bigger plane in 2018. The first two of the ARJ21-700 regional jets have been completed for a Chinese carrier, Chengdu Airlines, and are coming to the end of the certification process, according to Commercial Aircraft Corporation of China Ltd. The company said it has 252 orders. China launched the ARJ21 project in 2002 in an attempt to break into the Western-dominated aircraft market. The plane was promised for 2007 but delivery was pushed back due to technical problems. China is expected to become one of the world's biggest aircraft markets over the next two decades. Boeing Co. forecasts total demand at 5,580 planes worth a total of $780 billion. The ARJ21-700 can seat 78 to 90 passengers depending on its configuration, with a range of 2,225 to 3,700 kilometers (1,300 miles to 2,300 miles). Comac said it successfully completed test flights in North America in March and April and has flown 13,000 kilometers (8,000 miles). The company is targeting China's domestic market and flights to Southeast Asia. "We first want to develop our business in China and then gradually we will go to the international market," Comac executive Tian Min told reporters at Comac's assembly and manufacturing center in Shanghai. Comac's larger C919 is a single-aisle jet meant to compete with Boeing and Airbus Industrie. It can seat up to 168 passengers and has a planned range of 4,000 to 5,100 kilometers (2,500 to 3,200 miles). The C919 is an official initiative "for China to re-capture the value in aircraft manufacturing that currently goes offshore to Airbus and Boeing," said industry analyst Will Horton of CAPA Centre for Aviation. "With such a large objective, accomplishments will come gradually." The company has received 400 orders from 16 customers, including aircraft leasing company GE Capital Aviation Services. Low cost carrier Ryanair and British airlines have signed memorandums of understanding about their intention to purchase planes, Tian said. He wouldn't disclose price but said developers were focused on controlling costs. Most orders have come from China's state-owned airline industry under government instructions to support the program. "Global aviation remains pessimistic on the C919, given the ARJ21 delays," said Horton. On May 15, the first front fuselage of a C919 was delivered by a supplier to Comac, Tian said. He said the plane will be assembled in the second half of 2014, its maiden flight is due at the end of 2015 and the first delivery to a customer is slated for 2018. Longer term, Comac is cooperating with Russia to build a next-generation wide-body plane. The two sides signed a memorandum of understanding on Tuesday during Russian President Vladimir Putin's visit to China. Tian said Comac is working on a feasibility study with Russia. From its beginning in 2008, Comac has focused on developing the two passenger planes. It has grown from 3,800 employees to 8,300. Earlier news reports said the C919 maiden flight was due in 2014, with delivery in 2016. Tian said those reports were wrong, and Comac always planned for its maiden flight to be 90 months from the project launch.■

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BIOLOGY

Fish-Eating Spiders Lurk on Every Continent except Antarctica

Not all spiders catch their prey by spinning webs; a surprising number of arachnids quite literally fish for their meals, snatching scaly animals sometimes twice their size. In fact, a new scientific review found that fish-eating spiders lurk near rivers, ponds and swamps on every continent except Antarctica. They've lifted small catfish out of marshes in Ecuador; grabbed killifish out of nets in Cameroon; devoured dwarf fish in California aquariums; and stalked hatchery ponds in Oklahoma, continuing to kill fish even after eating their fill. Arachnologist Martin Nyffeler, of the University of Basel in Switzerland, and fish ecologist Brad Pusey, of the University of Western Australia, pored over scientific papers, citizen reports and photos from around the world and collected 89 such instances of spiders eating fish. Their review was published on June 18, 2014, in the journal PLOS ONE. Nyffeler has a history of studying the more exotic tastes of arachnids, which traditionally have been viewed as insectivores. He's previously published papers on earthworm-eating spiders, slug-eating spiders and, most recently, bat-eating spiders. "Rarely, this scattered information is processed and synthesized," Nyffeler said. "Very few scientists look at things from a global perspective." Until now, only a handful of semiaquatic species from the Pisauridae family (or nursery web spiders) had been recognized as fish eaters, Nyffeler said. But he and Pusey found that at least 18 different spider species from five families (Pisauridae, Trechaleidae, Lycosidae, Ctenidae and Liocranidae) have been seen catching fish in the wild. Another six species, including creatures from three additional familes (Cybaeidae, Desidae and Sparassidae), have been observed eating fish in lab settings. Most fish-eating incidents were reported in warmer climates, with a cluster in the Florida wetlands and neighboring regions. All cases involved freshwater fish — often common ones like mosquitofish or killifish, depending on the region. The largest fish was a 3.5-inch (9 centimeters) goldfish, lifted from a garden pond in Sydney by a clever fishing spider (*Dolomedes facetus*). When spiders go fishing, they often adopt an energy-saving, sit-and-wait strategy, much like how human fishermen might plop down on a dock with a line and hook. "The spider typically assumes a position near the water's edge, with the rear pair of legs anchored to some vegetation or wood or rock, and their three front pairs of legs out of the water's surface," Pusey said. Then, if a fish's fin or body brushes up against its front legs, the spider plunges in to latch on, biting its prey near the base of the head to inject a surge of deadly neurotoxins, before dragging the fish out of the water. "It can take many minutes for the fish to die, and it is probably safer for the spider to haul it out of the water to aid in handling and reduce the potential for escape," Pusey said. For spiders, the rewards of fishing are great. Much of an insect's weight comes from its hard exoskeleton, which isn't really useful to spiders in terms of food energy. In contrast, fish are made up of mostly muscle, and the only nondigestible parts are their scales, skin and skeleton. What's more, fish-eating spiders, on average, nab fish more than twice their size - "a big-ticket item," Pusey said. But the spread of spiders caught preying on fish might be skewed. Relatively few fish-eating spiders were tallied in Africa, Asia, Australia and Europe, the researchers noted. This may be because fewer nature enthusiasts and ecologists have been on hand to observe this behavior in the wild. In the neotropical region in Central and South America, these incidents were likely underreported because most fish-eating spider species (in the genuses *Trechalea* and *Ancylometes*) are nocturnal and live in remote areas, the researchers said. Meanwhile, some fishing spiders may be at risk of vanishing before they're studied. "In Europe, the only semiaquatic spider seen preying on fish in the wild, *Dolomedes plantarius,* is

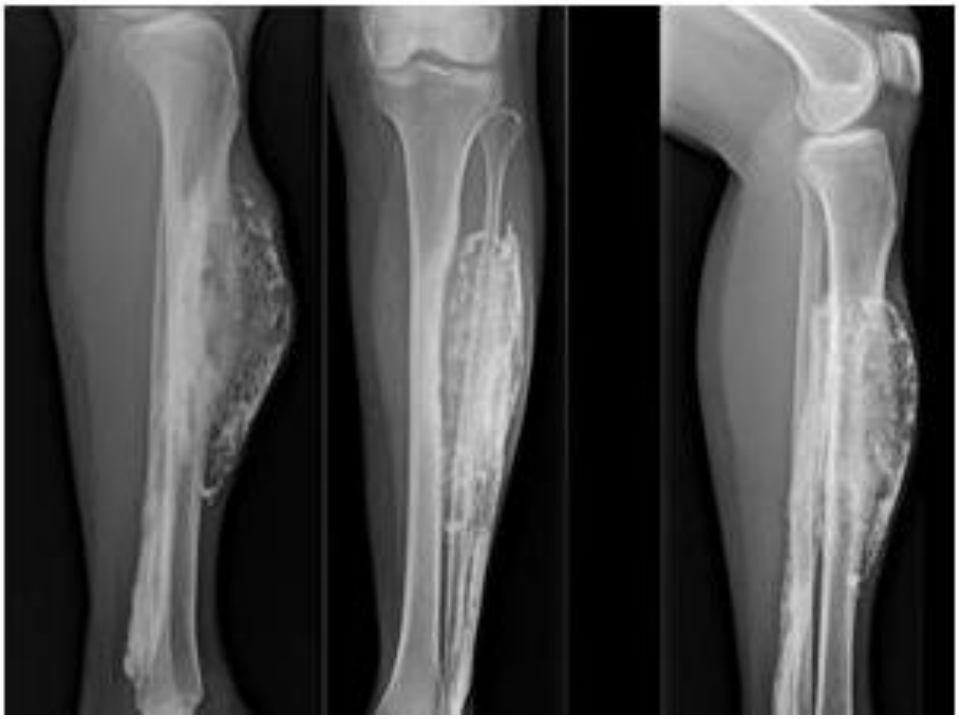
found on the IUCN Red List of Threatened Species," Nyffeler said. "Such spiders are endangered because of the fact that the wetland areas in most European countries are shrinking with alarming speed."■

PLoS ONE 2014;9(6): e99459

MEDICINE

Snakebite Causes Huge Mass in Woman's Leg, 50 Years Later

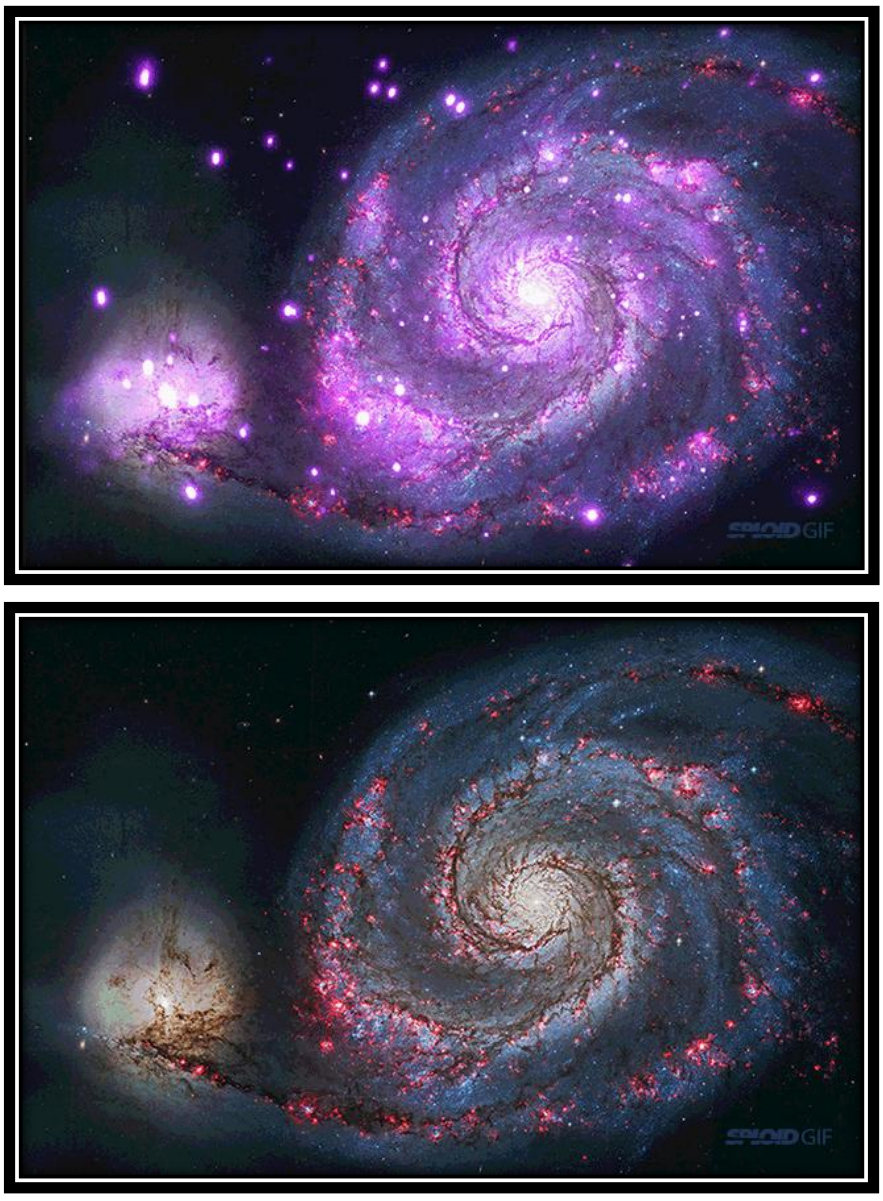
More than 50 years after being bitten by a venomous snake, a woman developed a large mass in her lower leg, according to a new report of her case. The 66-year-old woman in Thailand had been bitten by a Malayan pit viper, a venomous snake native to Southeast Asia, when she was 14. The painless mass had become noticeable 10 years earlier, and on an X-ray it looked like an enlarged cavity wrapped in a tough, calcified membrane, resembling an eggshell. It ultimately grew so large that it broke through the woman's skin. Doctors surgically removed the mass, and the wound completely healed by one month after the surgery, they wrote in their report, published June 16, 2014, in the Journal of Medical Case Reports. Such masses have rarely been reported following a snakebite, but they have been seen following other types of traumatic injury to muscles, according to the report's authors, who are researchers at the Prince of Songkla University in Thailand. A calcified mass can form as muscle tissue starts to die after a crushing injury or disruption of the blood supply, usually in the lower leg, said Dr. Darren Fitzpatrick, an assistant professor of Radiology at Mount Sinai Medical Center in New York, who wasn't involved in the woman's case. The result is usually a firm, hard, palpable mass that can be examined using X-ray or MRI scans. "It's very common for it to be mistaken for a tumor, but usually, the imaging helps with the diagnosis," Fitzpatrick said. In the case of this patient, doctors suspected that, because of the snakebite, the woman had developed a condition called compartment syndrome; the name refers to sections of muscle that are held together, along with nerves and blood vessels, by a tough tissue called the fascia, which does not stretch easily. The woman's compartment syndrome had been left untreated, according to the report. "Compartment syndrome usually happens below the knee," Fitzpatrick said. "You have a big group of muscles there, and they are in kind of a tight compartment. "If the muscles start to swell from trauma or injury, they can run out of space, and that could result in compromised blood flow," he added. "That's certainly a very plausible reason as to why this could have happened in this case."■



J Med Case Rep 2014, 8:193

Image of the Entire Spiral Galaxy

By NASA



This is *The Whirlpool*—the common name of M51, a spiral galaxy estimated to be 50,000 to 100,000 light years across. The purple dots that make it look like the biggest neon sign in the Universe are X-ray sources as seen by NASA's Chandra X-ray Observatory. Hundreds of glittering x-ray stars are present in the above Chandra image of the spiral and its neighbor. The image is a conglomerate of X-ray light from Chandra and visible light from the Hubble Space Telescope. The number of luminous x-ray sources, likely neutron star and black hole binary systems within the confines of M51, is unusually high for normal spiral or elliptical galaxies and suggests this cosmic whirlpool has experienced intense bursts of massive star formation. The bright cores of both galaxies, NGC 5194 and NGC 5195, also exhibit high-energy activity. In this false-color image where X-rays are depicted in purple, diffuse X-ray emission typically results from multi-million degree gas heated by supernova explosions.

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When you face the eruption
Do you feel the ending of the world?


When life starts,
It is so fresh.
Who knows the future?
Sunny
Rainy
Droughty
Or
……

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Sappho – A Great Poetess of Ancient Greece

Jie Gu, Jing Qin

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Sappho – A Great Poetess of Ancient Greece

Jie Gu*,Δ, Jing Qin†,Δ

BACKGROUND Sappho is an Ancient Greek poetess, whose poetry is well known in western literature and greatly impacts the development of Greek poetry. In the ancient world she was considered to be an equal footing with Homer, acclaimed as the "tenth muse".
OBJECTIVE This work focuses on the characters of Sappho and her poetry and her impact on Greek literature as well as western culture. The purpose of the study is to help further understand the great poet and better enjoy her works, thus forming a brighter image of Sappho.
METHOD Based on the studies and books of some scholars like Margaret Williamson and Bliss Carman, this paper attempts to adopt a descriptive-analytical method to summarize and analyze Sappho's identity and her poems, so as to provide a brighter image of this great poet.
CONCLUSION Among the Greek literature stands the great figure-Sappho. There is an inescapable fact that Sappho may have been the greatest poet who ever lived. In antiquity, Sappho was commonly regarded as the greatest, or one of the greatest, of lyric poets. Today, Sappho has set a standard for poetry that has never been exceeded. The work of Sappho has been widely admired and imitated.■

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Keywords: Greek literature – Lyric poetess – Female homosexuality – Sapphic Meter

THE poetess Sappho lived in the sixth century B.C. on the island of Lesbos, situated in the north-eastern Aegean. Known to have been born in a family of wealthy merchants in prosperous Lesbos in the sixth century B.C., Sappho was an innovator. At the time when poetry was principally used in ceremonial contexts and to praise the deeds of brave soldiers, Sappho had the audacity to use the first person in poetry and to discuss deep human emotions, particularly the erotic, in ways that had never been approached by anyone before her. In the ancient world she was considered to be on an equal footing with Homer, acclaimed as the 'tenth muse'. Much of her work only exists in fragments, however, because the later Christian Church (with its authorities in both Constantinople and Rome) ordered her 'lesbian' love poetry to be burnt. Her poetry was collected three hundred years after her death at Alexandria in nine books.

For about two thousand five hundred years Sappho has held her place as not only the supreme poet of her sex, but also the chief lyrist of all lyrists. Everyone who reads acknowledges her fame, concedes her supremacy; but to all except poets and Hellenists her name is a vague and uncomprehended splendor, rising secure above a persistent mist of misconception (1). However, when it comes to the name "Sappho", many people will tend to associate her with a variety of pioneering concepts,

many of which still seem to be controversial. However, there is no denying the fact that no one can take the place of her status on the Greek literature and western culture.

How could a woman have access to the public medium of song? What was the place of female sexuality in the public and religious symbolism of Greek culture? What is the sexual meaning of her poems? It seems that everyone is eager to get a clear picture of a woman whose place in the history of western culture has been at once assured and mysterious. Through the poetry she wrote, the culture she inhabited, and the myths that have risen around her, perhaps we can know something about the mysterious poetess and her unprecedented impact on western literature. Based on the materials, summary and analysis, this thesis aims to help further understand the great poet and better enjoy her works, thus forming a brighter image of Sappho.

A brief account of Sappho's lifetime and styles of her poetry

One of the great Greek lyrists and few known female poets of the ancient world, Sappho was born some time between 630 and 612 BC. She was an aristocrat who married a prosperous merchant, and she had a daughter named Cleis. Her wealth afforded her with the opportunity to live her life as she chose, and she chose to spend it studying the arts on the isle of Lesbos. Strabo says that Sappho was the contemporary of Alcaeus of Mytilene (born ca. 620 BC) and Pittacus (ca. 645 - 570 BC) and according to Athenaeus she was the contemporary of Alyattes of Lydia

(ca. 610 - 560 BC). The Suda, a 10th century Byzantine encyclopedia, dates her to the 42nd Olympiad (612/608 BC), meaning either that she was born then or that this was her floriut. The versions of Eusebius state that she was famous by the first or second year of the 45th or 46th Olympiad (between 600 and 594 BC). Taken together, these references make it likely that she was born ca. 620 BC, or a little earlier. Judging from the Parian Marble she was exiled from Lesbos to Sicily sometime between 604 and 594 BC.

She had a daughter named Cleis and two brothers. The fragmentary remains of Sappho's poems indicate that she taught her art to a group of maidens, to whom she was devotedly attached. Later writers of antiquity, commenting upon the group, accused Sappho of immorality and vice, from which arose the modern terms for female homosexuality, "lesbianism" and "sapphism". Sappho wrote nine books of odes, epithalamia or wedding songs, elegies, and hymns, but the extant fragments are few. They include the Ode to Aphrodite, quoted by the scholar Dionysius of Halicarnassus in the 1st century B.C. (2).

Sappho's family was politically active, which caused Sappho to travel a great deal. She was also noted during her life as the headmistress of a sort of Greek finishing school for girls. Most likely the objects of her poetry were her students.

According to one legend, Sappho committed suicide. She was apparently in love with Phaon, a young boatman, and jumped to her death when her love was rejected. The year of her death is not known.

Though a lot of Sappho's history and story is unknown, we can still get a basic understanding of her impact not only from the history of Greece, but also from various literatures and her works.

On one hand, having a good look at history, the Greeks accepted the reality of homosexuality and dealt with it in those terms. They did not promote homosexuality, but it may seem that way in the context of Christian morality which condemns it. They did feel that men should wait to be married and they felt that homosexuality may have helped with this process. Greek men first married at about 30 years of age. At that time, there is no doubt that Sappho is a special one. As far as I'm concerned, we cannot simply clarify her as the lesbian, her affection toward women is not out of flesh or body but the pursuit of soul. The only thing she wants to do is to bring the so-called "civilization" to more women, cultivating their mind. Thus, the lyrics became her spiritual sustenance where she reposed her trust in.

On the other hand, what can we see from her works is that she may have been the head of a girl's school and some of the poems may have been written as songs for the girls to sing at weddings and festivals. It is also possible that she was the leader of a poetry circle. Only a small amount of Sappho's poetry remains, most of which very fragmentary. Of her Algernon Charles Swinburne said: "Judging even from the mutilated fragments fallen within our reach from the broken altar of her sacrifice of song, I for one have always agreed with all Grecian tradition in thinking Sappho to be beyond all question and comparison the very greatest poet that ever lived." (3) Sappho was called a lyrist because, as was the custom of the time, she wrote her poems to be performed with the accompaniment of a lyre. Sappho composed her own music and refined the prevailing lyric meter to a point that it is now known as *sapphic meter* (4). She innovated lyric poetry both in technique and style, becoming part of a new wave of Greek lyrists who moved from writing poetry from the point of view of gods and muses to the personal vantage point of the individual. She was one of the first poets to write from the first person, describing love and loss as it affected her personally.

Her style was sensual and melodic; primarily songs of love, yearning, and reflection. Most commonly the target of her affections was female, often one of the many women sent to her for education in the arts. She wrote poems of love and adoration to women, and when they eventually left the island to be married, she composed their wedding songs. Especially in the last century, Sappho has become so synonymous with woman-love that two of the most popular words to describe female homosexuality – *lesbian* and *sapphic* have derived from her (4).

Estimation of her from other poets and her impact on western literature

How well was Sappho honored in ancient times? Plato elevated her from the status of great lyric poet to one of the muses. Upon hearing one of her songs, Solon, an Athenian ruler, lawyer, and a poet himself, asked that he be taught the song "Because I want to learn it and die." (4) In more modern times, many poets have been inspired by her works. Michael Field, Pierre Louys, Renée Vivien, Marie-Madeleine, Amy Lowell, and H.D. all cited Sappho as a strong influence on their work.

Many translations of these fragments are available today, with each of these translations offering a different approach to her work. Translating Sappho's poetry is challenging, partly because of the fragmented nature of the material. In reconstructing a poem, the translator must either trail off into oblivion periodically, or speculate on the missing pieces and take the risk (for the sake of lyric flow) of introducing elements that Sappho did not intend. Breaks in the poem can affect the intact lines, as well, robbing them of critical context (4). Even with the complication of fragments aside, a translator still has to decide how to translate the ancient Greek text, where to insert line breaks, how to stress each word, and any number of technical details that affect the meaning and the lyricism of the poem.

From ancient times to today, Sappho has remained an important literary and cultural figure. Her works continued to be studied and translated, new poets are inspired by her constantly, and speculation on her life remains popular. For a woman who has been dead for over two thousand years, this is quite an achievement.

Sappho really had a heart out of ordinary. It is common accepted that all of her works are considered to be great valuable today. Sappho used a classic meter, the "Sapphic Meter", in many of her poems, although she probably did not invent the meter herself. It is built on the following template:

- u – – u u – u – –
- u – – u u – u – –
- u – – u u – u – –
– u u – u – –
panchu eumares suneton poésai
panti tou`t , a gar polu perskethoisa
kallos anthrópón Elena ton andra
ton panariston

The Sapphic meter was one of the most popular meters in ancient Greek, Roman and older English poetry (16th to 19th century) (4). Her work was admired in antiquity for its euphony, and she was credited with musical invention. From the time of the European Renaissance, the interest in Sappho's writing has grown, seeing waves of fairly widespread popularity as new generations rediscover her work. Since few people are able to understand ancient languages, each age has translated Sappho in its own idiomatic way (4). As a result, many early translators used rhyme and worked Sappho's ideas into English poetic forms.

As a poetess in Greece at that time, Sappho was considered one founder of the Aeolian tradition of lyric poetry on Lesbos, Sappho wrote emotionally tender, introspective, first-person poems about the events and people in her life. Some say her work represents a "subjective revolution" in classical literature. She could be considered the first, prototypical romantic, 2400 years before the Romantic poets of the 19th century (5). Today, she is held as one of the finest poets ever in the rank of Shakespeare and Homer. She is still alive in the hearts of all true lovers of poetry.

During the ancient days, her admirers were countless. She was always mentioned as the Poetess (Homer was called the Poet). Her poetry was so renowned that Plato referred to her two centuries after her death as the tenth muse from the status of great lyric poet. An epigram in the Anthologia Palatina (9.506) ascribed to Plato states:

> *Some say the Muses are nine: how careless!*
> *Look, there's Sappho too, from Lesbos, the tenth.*

The philosopher Maximus from Tyrus (second half of 2nd c. AD), writes that Sappho was "small and dark" and that her relationships to her female friends were similar to those of Socrates:

> *What else was the love of the Lesbian woman except Socrates' art of love? For they seem to me to have practiced love each in their own way, she that of women, he that of men. For they say that both loved many and were captivated by all things beautiful. What Alcibiades and Charmides and Phaedrus were to him, Gyrinna and Atthis and Anactoria were to the Lesbian.*

Aelianus Claudius wrote in Assorted History (**Ποικίλη ιστορία**) that Plato called Sappho wise.

The Greek poet Odysseas Elytis (20th century AD from Lesbos) admired her in one of his Mikra Epsilon:

> *Such a being, both sensitive and courageous, is not often presented by life. A small-built deep-dark-skinned girl, that did prove to be equally capable of subjugating a rose-flower, interpreting a wave or a nightingale, and saying 'I love you', to fill the globe with emotion.*

Mr. J. Addington Symonds says: "The world has suffered no greater literary loss than the loss of Sappho's poems. So perfect are the smallest fragments preserved... that we muse in a sad rapture of astonishment to think what the complete poems must have been... Of all the poets of the world, of all the illustrious artists of all literatures, Sappho is the one whose every word has a peculiar and unmistakable perfume, a seal of absolute perfection and illimitable grace." (5) No one who wishes to understand Sappho can afford to neglect a study of the poem thus annotated by its author. As Professor F. T. Palgrave justly says, 'Sappho is truly pictorial in the ancient sense: the image always simply presented; the sentiment left to our sensibility.' Actually, her remaining verses are the supreme success as well as the final achievement of the poetic art.

Sappho's identity and impact on modern life

As a poetess enjoying the equal popularity with Homer, it is the identity of her own that made her stand head and shoulders above others. First of all, for over 1,500 years, Sappho's poems were a part of the Greek and Roman literary canon along with Homer, Euripides and the other famous writers of the past. The nine volumes of poems were read by all students and admired for their beauty and emotional strength. A person who had not read Sappho was considered a cultural ignorant.

In the second place, in Ancient history, sexuality wasn't regarded as negatively as it is now. Humans were naturally sexual beings. In ancient Greece, the poems of Sappho were universally admired, so much so that she was called "the poetess" (as Homer was "the poet") (6), and Plato suggested she should be honored as one of the Muses, more than human, a goddess of poetry. Her name and the name of her native island have come to carry the meaning of female homosexuality.

Thirdly, the story of Sappho demonstrates love's universal appeal in prehistoric civilization. It is said that Sappho led a group of women on the island and taught them how to love before marriage. What's more, Sappho started her own school for girls. She embraced girlhood and being young. Sappho focused on passion and love for all, and she demonstrated love between all sexes and people being life's main goal. In a word, Sappho introduced a new type of lifestyle.

Last but not the least, Sappho's brilliant picture of the girl outshining the ladies of Lydia is interlocked with the image of sunset and the moon rising. But there is a change of focus which immediately surprises. Homer, the ultimate backdrop for everything the coming ages, had spoken dozens of times of the "rosy-fingered Dawn", virtually as a clich é, or formula of his bardic tradition. But now Sappho changes the phrase to "the rosy fingered Moon…", a surprising alteration and one which notes the difference between the two human worlds. One is the world of men with swords and fleets of ships over the Homeric "black earth", the other is the world of women and Lovers and what the heart desires (7).

In the eternal universe, every human being has a one-off chance to live-his existence is unique and irretrievable, for the mold with which he was made, as Rousseau said, was broken by God immediately afterwards. Fame, wealth and knowledge are merely worldly possessions that are within the reach of anybody striving for them. Perhaps a full awareness of this made Sappho unswervingly throw herself into the sea. She lived her own life, which is not easy at that time. There is no doubt that this is one of the legacies she left for us in addition to her works, the modern society, which is well worth thinking about. It is not easy to be what one really is. There is many a person in the world who can be identified as anything – either his job, his status or his social role – that shows no trace about his individuality. It does do him justice to say that he has no identity of his own, if he doesn't know his own mind and all his things are arranged by others or decided by the mainstream. In this aspect Sappho does set an example for us.

Conclusion

All in all, to suggest that all of western literature is no more than a footnote to the writings of ancient Greece

is an exaggeration, but it is nevertheless true that the Greek world of thought was so far-ranging that there is scarcely an idea discussed today not already debated by the ancient writers. Among the Greek literature stands the great figure – Sappho. There is an inescapable fact that Sappho may have been the greatest poet who ever lived. In antiquity, Sappho was commonly regarded as the greatest, or one of the greatest, of lyric poets. Today, Sappho has set a standard for poetry that has never been exceeded. The work of Sappho has been widely admired and imitated.

She was not a goddess. She was an historical mortal woman. But she is like a goddess because of her fame and accomplishments. In fact, we are powerless to rebuild the image of the great lyric poetess. Sappho is like a blank space. We may try to listen to her inner voice, to study the works of her and refine the sense of beauty, to know more about her impact on human civilization, hoping to have as much soul as her, to be and to do all this, we find that all we have done is just try to fill the blank with what we want to do. Sappho, the figure itself and her works may be neglected in modern times, but her pursuit of ideal life, endless exploration of forms of art and the values of truth and civilization will be everlasting , encouraging us to seek a future lighted with the radiant colors of hope.■

Author Contributions

The paper is written by Jie Gu and Jing Qin. Jing Qin is the co-author who offers very earnest help in the work.

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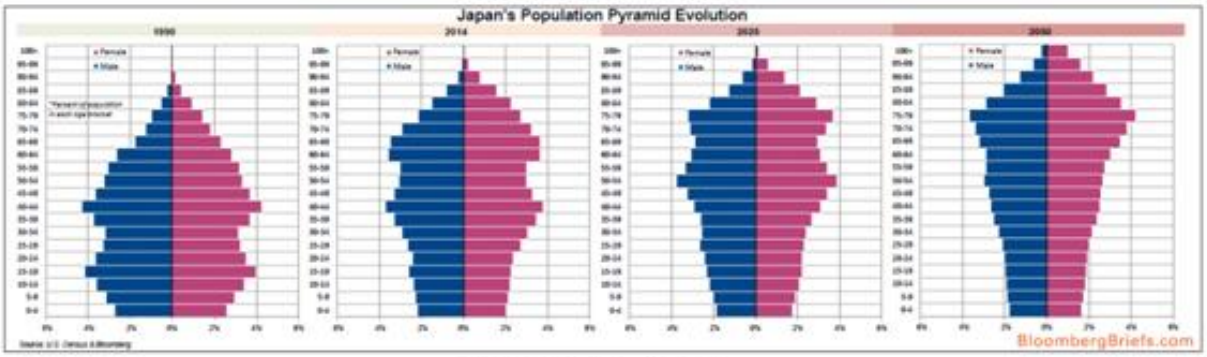
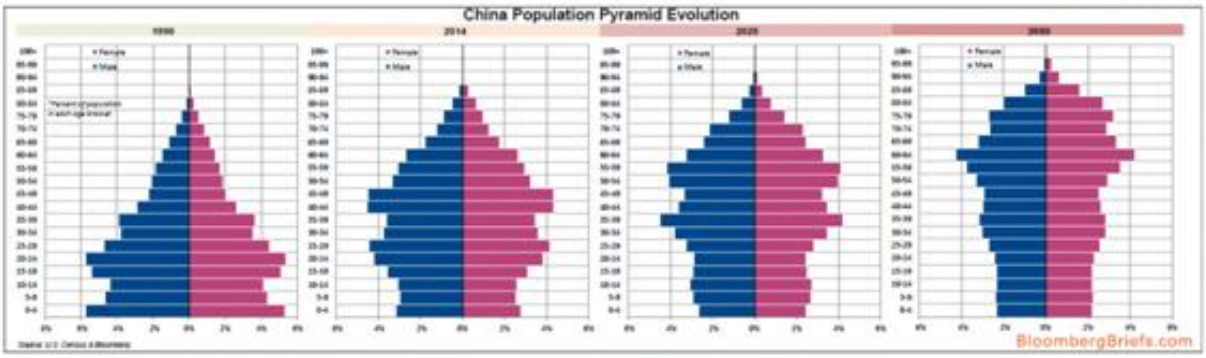
COUNTRIES with a young, growing workforce grow faster. Countries with an aging, shrinking workforce find growth to be much harder. Michael McDonough, the Chief Economist at Bloomberg LP, just published this great chart, showing the demographic pyramids of Japan, China, and the US. Demographic pyramids show the relative size of each age cohort at a point in time. So for example, you can see that in 1990, Japan had a lot of workers who were in their early 40s (prime working age) as well as a sizable contingent of teenagers. But you can see that these days, there are very few teens, and lots of folks who are older than 60, which speaks to how the country is graying. By 2050, there will be tons of 70 year olds, and almost no teenagers (relatively speaking). In 1990, China was incredibly young, with almost nobody old, but as you can see it is rapidly aging as well, with a substantial contingent of workers in their 40s. The best looking, really, is the US, which has a nice evenly distributed population. The shape of the pyramid isn't changing much, in part because our immigration policy keeps the population from getting too old.



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