

Ida — Researchers from the University of Osnabrue have suggested the species, which was found 95 per cent of cells, may be the root of anthropoid evolution, when primates were first developing the features that would evolve into our own.

Discovered in Germany, Ida is so well preserved that even the outline of its ear can be seen. An incredible 95 percent complete fossil of a 47 million-year-old human ancestor has been discovered and, shock, but she says he “uses shock almost as a formal element, not so much to thrust work in the public eye, but rather to make aspects of life and death visible.”

**BACK TO THE FLOCK**
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**Danien Hirst**
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**Maureen Vanden Eynde**
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**CHINESE CRYPTOZOOLOGY**
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**Shen Shaomin**
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**Charles Avery**
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**Chaotic Warfare**
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**Juan Fombuena & Pere Formigera**
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**Solenophylla Polipodiata**
18/01/13

**Phylum:** Chordata

**Subphylum:** Vertebrata

**Sighting:** Found in a deciduous forest in the federal state of Tamil Nadu in southern India, thanks to informant G-16, who was attracted by the colorful straggles. Observation and capture lasted for a period of 30 days, during which it proved impossible to locate any other specimens. Survived in captivity until it was killed by artificial means to allow study.

**Date of Capture:** 30 April 1941.

**Main Traits:** Ossous internal skeleton. Pulmonary respiration. Typical vertebrate nervous system. It is not possible to observe its reproductive system, but everything would indicate that it is oviparous with division of the sexes. The captured specimen is an adult male measuring 13cm length.

**Morphology:** Corresponds to a mixture of reptile and non-flying bird. Although it is quite possible that it was not possible to observe its reproductive system, but everything would indicate that it is oviparous with division of the sexes. The captured specimen is an adult male measuring 13cm length.

**Rayan Crockett**
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**Black Cat / White Cat**
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**Spiders on Marijuana**
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**Spiders on Weed**
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**Bacterial (Re)Evolution**
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**IRA Barrell**
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**THE BEGINNING OR THE END**
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**Hunter Duprat**
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**KINETIC SKELETONS**
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**Thao Jansen**
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**MAMMOTH CLONE-SCIENCE, OR SIMPLY FICTION?**
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**Baby Mammoth discovered in Siberia in 2007**
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**Alexis Rockman**
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**Five cloned piglets Noel, Angel, Jayo and Mary**
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ice age extinctions (and a collage of MacPhee's in New York). agrees: "I am really stunned," he says, "that there are scientists still pushing this idea." MacPhee, who has worked extensively with the tarbird mammoth in Siberia, and Greenwood say that making an act copy of a specimen that died off 10,000 years ago is possible only in science fiction movies.

The main reason is simple: To have any chance at a successful cloning, scientists must start with pristine, complete DNA. But even in cold environments, cells quickly break down after an organism dies: entropy occurs, and bacteria and certain enzymes latch onto and destroy cellular material. All the DNA found from long-extinct animals (even those remains found in the Siberian permafrost) has been incomplete and fragmented.

"If freezing is done under special conditions, such as in a modern laboratory, cells with their genetic material can be preserved indefinitely," explains Russian scientist Alexei Tikhnov. "But conditions out in the permafrost are far from ideal." Tikhnov has worked with the best preserved mammoth ever found, a baby mammoth whose cells pulled from a construction site in 1977. Nicknamed "Dima," the small calf still had its skin and looked like it could have died just days earlier. But it probably fell into a mud pit and died quickly 44,000 years ago. Dima now rests in Tikhnov's institute in St. Petersburg. Studies have shown that proteins in Dima's cells were seriously modified after death, and that other substances common in living tissues (such as phosphorus molecules) disappeared entirely.

Cloning is only possible when the nucleus taken from a living cell is placed into an egg from which the original nucleus has been removed, as has been done in the case of the sheep Dolly. This substitute nucleus, with its DNA, proteins and other crucial material completely intact, was what controlled the development of Dolly. Fragmenting of DNA into a cell without a nuclear transfer would not result in a clone, Greenwood explains it this way: "If I throw all the parts needed to make a car down the stairs of a building, I will not have a Porsche 911 in the stairwell when they land."

Ryuzo Yanagimachi, a scientist in Hawaii who has successfully cloned mice and other mammals, says he would like to clone a mammoth. But he agrees that this could happen only if intact DNA is ever recovered from a long-dead mammoth. In recent years a Japanese team has mounted several expeditions into Russia's far north with the expressed aim of trying to bring a mammoth back to life. The team's main intent is to recover frozen sperm from a mammoth and then use it to impregnate a female elephant, the mammoth's closest living relative. But Greenwood and MacPhee say this is equally problematic, even on the off-chance that intact sperm DNA from a mammoth could be found. "Mammoths and elephants have been separated by about 4 to 6 million years of evolution," says Greenwood. "This would be like crossbreeding a human and a chimp and expecting to have a successful generation of a hybrid."

It is possible that in the march of time and scientific advance, technologies may be developed that will allow extinct creatures to be cloned? Or, someday, may a perfectly intact sample of mammoth DNA be found? According to MacPhee, such questions remain too tough to answer. "There isn't even a direction we can point to," he says, "which would indicate whether cloning extinct animals will ever be possible." [Bill Gasperini © 2005 Discover Communications Inc.]

**X-RAY SPIDER**
18/01/13

**Desin inspired by nature: Biomimetics is the application of methods and systems found in nature to the study and design of engineering systems and modern technology. The transfer of technology from life forms to synthetic constructs is desirable because evolutionary pressure typically forces natural systems to become highly optimized and efficient. A classical example is the development of dirt- and water-repellent paints (coatings) from the observation that the surface of the lotus flower plant is practically antisticky for anything, the lotus leaf. Examples of biotics in engineering include the hulls of boats imitating the thick skin of dolphins; sonar, radar, and medical ultrasound imaging imitating the echolocation of bats, and the arch immitation of the spine and the field of computer science, the study of biotics has produced artificial neurons, artificial neural networks, and swarm intelligence.**

For decades, scientists have looked to scorpions and other eight- and six-legged creatures for inspiration. Imagine a creature that would have inhabited a wooded area and lived in a warm climate. Internal details can be seen in the view to bottom right.

The ancient creepsy-crawly had been trapped in amber and preserved in a lowland area around Paris, France. The scientists reconstructed the creature's original appearance using an X-ray-based medical imaging technique. The pictures, published in the journal *Geoscience*, "digitally dissect" the tiny spider to expose amazing details such as the preservation of internal organs.

This is the first time that the medical imaging technique, known as Very High Resolution X-Ray Computed Tomography, has been used to investigate a fossil in amber – and Dr Penney said it had the potential to "revolutionize" the way fossils were studied.

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**Jerome Krukowski**
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**Body Double**
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**Imageneering**
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**Neotomaera Hystrix**
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**Taurulus Sarmatusia**
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There are not the first pig clones, but PPL, a commercial offshoot of the Roslin Institute in Scotland, says the pigs are the first to be engineered in a way that should help prevent their tissues being rejected by the human immune system.

The animals' biological make-up is slightly different from ordinary pigs. PPL says that it intends to use the pigs as part of its programme to seek a cure for humans suffering from diabetes.

**\*\*\*\*DUP FROG**
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**Garnet Herz**
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**SMART BY NATURE**
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**DARWIN'S NIGHTMARE**
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**Charles Darwin's Origins of Species**
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**Five cloned piglets Noel, Angel, Jayo and Mary**
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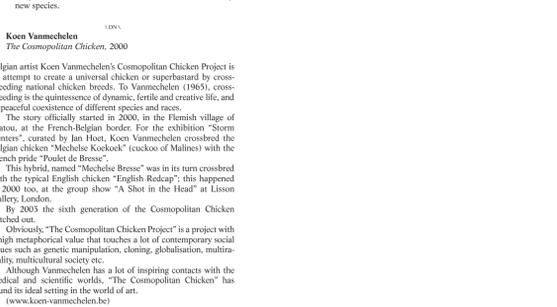
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By Alan Weisman

Given the mounting toll of fouled oceans, overheated air, missing topsoil, and mass extinctions, we might sometimes wonder what our planet would be like if humans suddenly disappeared. Would Superfund sites revert to Gardens of Eden? Would the seas again fill with fish? Would our concrete cities crumble to dust from the force of tree roots, water, and weeds? How long would it take for our traces to vanish? And if we could answer such questions, would we be more in awe of the changes we have wrought, or of nature's resilience?

A good place to start searching for answers is in Korea, in the 155-mile-long, 2.5-mile-wide mountainous Demilitarized Zone, or DMZ, set up by the armistice ending the Korean War. Aside from rare military patrols or desperate souls fleeing North Korea, humans have barely set foot in the strip since 1953. Before that, for 5,000 years, the area was populated by rice farmers who carved the land into paddies. Today those paddies have become barely discernible, transformed into pockets of marsh, and the new occupants of these lands arrive as dazzling white squadrons of red-crowned cranes that glide over the lushness in perfect formation, touching down so lightly that they detonate no land mines. Next to whooping cranes, they are the rarest such birds on Earth. They winter in the DMZ alongside the endangered white-necked cranes, recovered in Asia as sacred portents of peace.

If peace is ever declared, suburban Seoul, which has rolled ever northward in recent decades, is poised to invade such tantalizing real estate. On the other side, the North Koreans are building an industrial megapark. This has spurred an international coalition of scientists called the DMZ Forum to try to conserve the area for a peace park and nature preserve. Imagine it as the Korean Gettysburg and Yosemite rolled together," says Harvard University biologist Edward O. Wilson, who believes that tourism revenues could trump those from agriculture or development.

As severely natural as the DMZ now is, it would be far different if people throughout Korea suddenly disappeared. The habitat would not revert to a truly natural state until the dams that now divert rivers to slake the needs of Seoul's more than 20 million inhabitants failed – a century or two after the humans had gone. But in the meantime, says Wilson, many creatures would flourish. Otters, Asiatic black bears, musk deer, and the nearly vanished Amur leopard would spread into slopes reforested with young, daimyo oak and bird cherry. The few Siberian tigers that still prowled the North Korean-Chinese borderlands would multiply and fan across Asia's temperate zones. "The wild carnivores would make short work of livestock," he says. "Few domestic animals would remain after a couple of hundred years. Dogs would go feral, but they wouldn't last long. They'd never be able to compete."

If people were no longer present anywhere on Earth, a worldwide shakedown would follow. From zebra mussels to fire ants to crops to kudzu, exotics would battle with natives. In time, says Wilson, all human attempts to improve on nature, such as our painstakingly bred horses, would revert to their origins. If horses survived at all, they would devolve back to Przewalski's horse, the only true wild horse, still found in the Mongolian steppes. "The plants, crops, and animal species man has wrought by his own hand would be wiped out in a century or two," Wilson says. In a few thousand years, "the world would mostly look as it did before humanity came along – like a wilderness."

The new wilderness would consume cities, much as the jungle of north-central Guatemala consumed the Mayan pyramids and megalopolises of overlapping city-states. From A.D. 800 to 900, a combination of drought and inter-ethnic warfare over dwindling farmland brought 2,000 years of civilization crashing down. Within 10 centuries, the jungle swallowed all.

Mayan communities alternated urban living with fields sheltered by forests, in contrast with today's paved cities, which are more like man-made deserts. However, it wouldn't take long for nature to undo even the likes of a New York City. Jameel Ahmad, civil engineering department chair at Cooper Union College in New York City, says repeated freezing and thawing common in months like March and November would split cement within a decade, allowing water to seep in. As it, too, froze and expanded, cracks would widen. Soon, weeds such as mustard and goosegrass would invade. With nobody to trample seedlings, New York's prolific exotic, the Chinese siltener tree, would take over. Within five years, says Dennis Stevenson, senior curator at the New York Botanical Garden, ailanthus roots would heave up sidewalks and split sewers.

That would exacerbate a problem that already plagues New York – rising groundwater. There's little soil to absorb it or vegetation to transpire it, and buildings block the sunlight that could evaporate it. With the power off, pumps that keep subways from flooding would be stilled. As water sluiced away soil beneath pavement, streets would crater.

Eric Sanderson of the Bronx Zoo Wildlife Conservation Society heads the Mannahatta Project, a virtual re-creation of pre-1609 Manhattan. He says there were 30 to 40 streams in Manhattan when the Dutch first arrived. If New Yorkers disappeared, sewers would clog, some natural watercourses

would reappear, and others would form. Within 20 years, the water-soaked steel columns that support the street above the East Side's subway tunnels would corrode and buckle, turning Lexington Avenue into a river.

New York's architecture isn't as flammable as San Francisco's clapboard Victorians, but within 200 years, says Steven Clements, vice president of the Brooklyn Botanic Garden, tons of leaf litter would overflow gutters as pioneer weeds gave way to colonizing native oaks and maples in city parks. A dry lightning strike, igniting decades of uncut, knee-high Central Park grass, would spread flames through town.

As lightning rods, rusted away, roof trees would leap among buildings into paneled offices filled with paper. Meanwhile, native Virginia creeper and poison ivy would clasp at walls covered with lichens, which thrive in the absence of air pollution. Wherever foundations failed and buildings tumbled, lime from crushed concrete would raise soil pH, inviting buckhorn and birch. Black locust and autumn olive trees would fix nitrogen, allowing more goldenrods, sunflowers, and white snakeroot to move in along with apple trees, their seeds expelled by proliferating birds. Sweet carrots would quickly devolve to their wild form, unpalatable Queen Anne's lace, while broccoli, cabbage, brussels sprouts, and cauliflower would regress to the same unrecognizable broccoli ancestor.

Unless an earthquake strikes New York first, bridges spared yearly applications of road salt would last a few hundred years before they stays and bolts gave way (last to fall would be Hell Gate Arch, built for railroad and cast-iron good for another thousand years). Coasts would invade Central Park, and deer, bears, and finally wolves would follow. Ruins would echo the low song of frogs breeding in streams stocked with alewives, herring, and muskels dropped by seagulls. Missing, however, would be all fauna that had adapted to humans. The ubiquitous cockroach, an insect that originated in the hot climes of Africa, would succumb to unheated buildings. Without garbage, rats would starve or serve as lunch for peregrine falcons and red-tailed hawks. Pigeons would genetically revert back to the rock doves from which they sprang.

It's unclear how long animals would suffer from the urban legacy of concentrated heavy metals. Over many centuries, plants would take these up, recycle, redeposit, and gradually dilute them. The time bombs left in petroleum tanks, chemical plants, power plants, and dry-cleaning plants might poison the earth beneath them for eons. One intriguing example is the former Rocky Mountain Arsenal next to Denver International Airport. There a chemical weapons plant produced mustard and nerve gas, incendiary bombs, napalm, and after World War II, pesticides. In 1984 it was considered by the arsenal commander to be the most contaminated spot in the United States. Today it is a national wildlife refuge, home to bald eagles that feast on its prodigious prairie dog population.

However, it took more than \$130 million and a lot of man-hours to drain and seal the arsenal's lake, in which ducks once died minutes after landing and the aluminum bottoms of boats sent to fetch their carcasses rotted within a month. In a world with no one left to bury the bad stuff, decaying chemical containers would slowly expose their lethal contents. Places like the Indian Point nuclear power plant, 35 miles north of Times Square, would dump radioactivity into the Hudson long after the lights went out.

Old stone buildings in Manhattan, such as Grand Central Station or the Metropolitan Museum of Art, would outlast every modern glass box, especially with no more acid rain to pock their marble. Still, at some point thousands of years hence, the last stone walls – perhaps chunks of St. Paul's Chapel on Wall Street, built in 1766 from Manhattan's own hard schist – would fall. Three times in the past 100,000 years, glaciers have scraped New York clean, and they'll do so again. The mature hardwood forest would be mowed down. On Staten Island, Fresh Kills's four giant mounds of trash would be flattened, their vast accumulation of stubborn PVC plastic and glass ground to powder. After the ice receded, an unnatural concentration of reddish metal – remnants of wiring and plumbing – would remain buried in layers. The next tectonic to arrive or evolve might discover it and use it, but there would be nothing to indicate who had put it there.

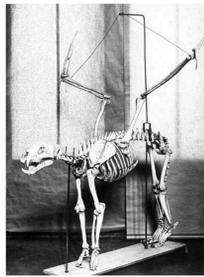
Before humans appeared, an oriole could fly from the Mississippi to the Atlantic and never alight on anything other than a treetop. Unbroken forest blanketed Europe from the Urals to the English Channel. The last remaining fragment of that primeval European wilderness – half a million acres of woods straddling the border between Poland and Belarus, called the Bialowieza Forest – provides another glimpse of how the world would look if it were gone. There, rich groves of huge ash and linden trees rise 138 feet above an understory of hornbeams, ferns, swamp alders, massive birches, and crockery-size fungi. Norway spruces, shaggy as Methuselah, stand even taller. Five-century-old oaks grow so immense that great spotted woodpeckers split whole spruce cones in their three-inch-deep bark furrows. The woods carry pygmy owl whistles, nutcracker croaks, and wolf howls. Fragrance wafts from cons of mulch.

High privilege accounts for such unbroken antiquity. During the 14th century, a Lithuanian duke declared it a royal hunting preserve. For centuries it stayed that way. Eventually, the forest was subsumed by Russia and in 1888

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18C11



18S11



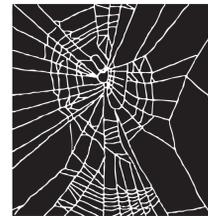
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18M11



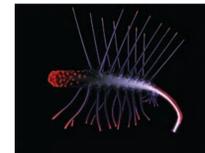
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18Y11



18B211



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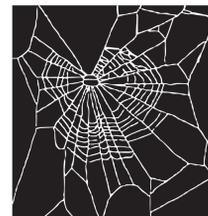
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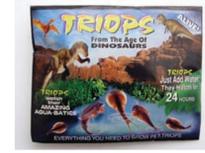
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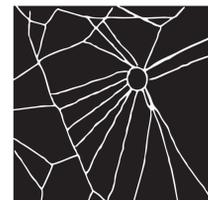
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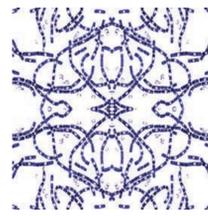
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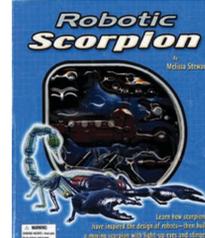
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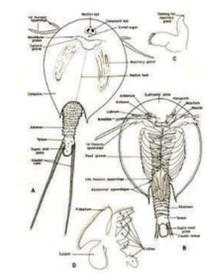
18M11



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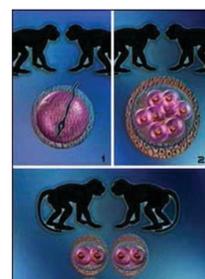
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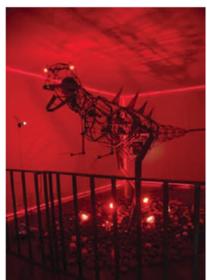
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18D11



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