If there ever was: an exhibition of extinct and impossible scents
Rob Blackson

- Syzygium gambleanum, Hopea shingkeng, Ilex gardneriana, and Santalum fernandezianum
  Over the past century, deforestation, climate change, and urban sprawl have pushed numerous scented and beautiful varieties of wild plants into extinction. These forces have caused many plants to search for better places to take root. However, flowering plants with heavy seeds do not "move" quickly enough to respond to these environmental changes. Another contributing factor to this problem is the agricultural industry. Using fertilizers that artificially raise the level of nutrients in the soil encourages some plant species to move into richer patches of land and, thus, into competition with other plants for space. Eventually, the less hardy species are eliminated1.

  Syzygium gambleanum, Hopea shingkeng, Ilex gardneriana, and Santalum fernandezianum are extinct flowering plants. Syzygium gambleanum, a sharp rose apple of the myrtle family commonly grown in India, became extinct in 1998 due to habitat loss. Aromatic wood from the small Hopea shingkeng tree was used to make house posts in India and as a result was also registered as extinct in 1998. Since 1997, the pungent herbal smell of Ilex gardneriana holly has vanished. And due to logging, the smooth scent of Chilean Santalum fernandezianum sandalwood has been gone since 1908. The extinct aroma from each of these plants has been recreated using scents derived from relatives of these species and blended together to form this now impossible bouquet[2].

  Scent by Bertrand Duchaufour

  1. The Guardian (London), 24 April 2006.
  2. I am grateful for the research of James Wong of Botanic Gardens Conservation International for compiling this list of extinct plants.

- The surface of the Sun
  The sun's rays have been Earth's source of life and destruction for over 4.5 billion years. Our closest star's unbearable intensity is created by an ongoing chemical reaction similar to that of a perpetual atomic blast suspended in gravity. As such, the sun is predominantly composed of hydrogen and helium with a molten cocktail of copper, terbium, strontium, antimony, and europium in its core.

  Scent by Geza Schön

- The Hiroshima scent
  There is, as yet, no conclusive scientific explanation for how our noses smell. Currently, two theories are debated by scientists. The first theory maintains that our noses recognise smells by their shape. For example, the airborne particle's molecular shape of the smell from a rose fits into a specific 'rose' receptor in our noses, in the same way that a round peg fits into a round hole. In reality, this would mean that inside our noses are hundreds of intricately defined holes—each waiting for a specific matching

smell molecule to fit inside. The other theory relies on vibration. Every molecule, depending on the mass of its atoms and the energy of its binding electrons, has a different vibration. This vibration is recognised by our noses as smell; different vibrations are different smells. Some scientific proof for this second theory seems to have come from an unlikely and regrettable source. Miles from the epicentre of the bombing at Hiroshima, victims described a smell of burning rubber that coincided with the flash of the blast. It is impossible for airborne particles (round peg) to have travelled that distance in such a flash of time. Rather, it is likely that the vibration of gamma rays from the flash, hitting the smell receptors in the victims' noses, caused the odour[1].

Christophe Laudamiel created this scent inspired by the vibration of Hiroshima's atomic blast. He explains the theory underpinning this scent as follows: "One aspect of the theory, if proven in some ways, will require some isotopic work. Isotopes are one element, say carbon or uranium, but different only by the number of neutrons in their nucleus. Two common isotopes are Carbon 12 (found in coal and diamond) and Carbon 14 (to date old bones). Isotopes are extremely important for nuclear reaction, because some of them are radioactive, and might be important if the vibration theory is even partially correct. The Hiroshima scent contains a large portion of one isotopic ingredient."

Scent by Christophe Laudamiel

1. I am indebted to Chandler Burr's novel, The Emperor of Scent (2004, Arrow Books) for introducing this topic to me.

- The scent of surrender
  Incense had many practical uses in times of ancient warfare. It was often lit during battles as a way of gaining favour from the gods of war and strength. Before the tradition of waving the white flag of surrender, burning a specific blend of incense over the walls of a city was also an indication of defeat. Through modern-day Israel, Syria, and Egypt, archaeologists have discovered clay reliefs depicting the presentation of the censer (incense burner) as a form of surrender. Commanders of cities such as Ascalon, besieged by the Egyptians during the reign of Rameses II, held a censer stuffed with a combination of storax, myrrh, frankincense, and mastic over the city walls. The smell of the city's surrender would then be carried on the wind to the advancing army[1].

  Scent by Patricia Millns and Kóan Jeff Baysa

  1. K. Nielson, Incense in Ancient Israel (Leiden: E.J. Brill, 1986), 13; quoted in Constance Classen, David Howes, and Anthony Synnott, Aroma: The Cultural History of Smell (London: Routledge, 1994), 39.

- Body Odour
  On December 28, 1989, a slim young woman named Susanne Böden was handing out leaflets in East Berlin with her little sister. The leaflets promoted free speech for citizens of the Deutsche Democratic Republic. Shortly after she started handing them out, Susanne was arrested by the Stasi, or East German secret police. She stood trial at Stasi headquarters

in East Berlin and was served with a caution. Before being released, the Stasi gave her a square of fabric to wipe against the back of her neck. This fabric was then kept by the Stasi in a sealed jar with her name on it.

A person's body odour is as distinctive and traceable as a fingerprint. The Stasi tracked the movements of suspected dissenters with trained sniffer dogs. To get the scent of their suspects, the Stasi employed a variety of methods such as breaking into apartments and stealing dirty clothes or sitting suspects in a heated room for questioning. The Stasi would then save a patch of fabric from this chair's upholstery that had absorbed the suspect's body odour.

The Berlin Wall fell within months of Susanne's trial. During the ensuing celebrations Stasi Headquarters were ransacked. Inside a small room at the headquarters, revellers found hundreds of jars labelled with people's names and stuffed with bits of fabric.

Scent by Maki Ueda

- Cleopatra's fragrance
  Due to the wealth of preserved ancient Egyptian records, much of the history of making scents begins with Egypt. From incense to cosmetics and perfumery, Egyptians developed numerous manufacturing techniques for a range of spiritual and social aromatic occasions. Like our contemporary interests in preserving a youthful appearance, Egyptian cosmetic care was often devoted to protecting skin from the sun's harsh rays. One method the Egyptians used to keep their bodies well-moisturised was to perch a solidified cone of scented beef tallow on the top of their heads. As the day wore on, the unguent would gradually melt covering their hair and body with a film of fragrance.

  Egyptian perfumes were a very precious commodity and could only be used for three purposes: the aesthetic needs of the very rich and royal class, as offerings to deities, and to embalm the dead. The plants used to make many Egyptian perfumes were known as the "fruits of the eye of Re". This is because the scents from these plants were thought to have originated from the eye of the sun-god Re[1]. The most sacred of all Egyptian fragrances was kyphi, an aromatic blend including juniper, raisins, cassia and pine kernels, a recipe most likely to have originated from Greece. This precious scent was reserved only for the gods and would be offered to them each night by temple priests. Cleopatra was the last of the Macedonian Ptolemy rulers of Egypt and introduced many changes to Egyptian religious law. She believed that kyphi should not be restricted to the gods but should also be worn by women. Although there are no specific accounts of the fragrance Cleopatra wore, it is recorded that towards the end of her life she wore the perfume of "her choice"[2].

  Scent by Steven Pearce

  1. Lise Manniche, Sacred Luxuries: Fragrance, Aromatherapy & Cosmetics in Ancient Egypt (Ithaca: Cornell University Press, 1999), 34.

  2. Mary Lynne, Galaxy of Scents: The Ancient Art of Perfume Making (United Kingdom: Lightning Source, UK, Ltd., 1968), 34.

If there ever was
An exhibition of extinct and impossible smells

- A perfume capable of making a woman beautiful forever
  Contemporary perfumery is often considered a side effect of science and art. However, the origins of the trade are rooted in the study of alchemy. In eighteenth century France, changes in aristocratic tastes along with relaxed perfumery guild membership laws allowed the study of perfumery to flourish. A number of the earliest and most popular perfumes retained traces of perfume's alchemical origins. For example, Le Secrets de Maistre Alexys (1555), the oldest known book of perfume recipes, contains the combination of ingredients, which would create a perfume capable of making a woman beautiful forever: "Take a young raven from the nest; feed it on hard eggs for forty days, kill it, and then distil it with myrtle leaves, talc, and almond oil."[1]

  Scent by Christoph Hornetz

  1. Mandy Aftel, Essence & Alchemy (London: Bloomsbury, 2001), 27.

- The Titanic perfume
  On April 10, 1912, Adolphe Saalfeld, an entrepreneurial German perfumer, boarded the Titanic. He brought with him a bag of his own perfumes with which he was hoping to seek his fortune in New York. Saalfeld survived but his perfumes, he thought, were lost for ever. Almost ninety years later, a submersible submarine combing the ocean floor for personal effects lost on the Titanic discovered a leather satchel. When it was brought to the surface, sixty-five sealed aluminium vials were found inside. As the first vial was opened a delicate scent of Edwardian perfume filled the room.

  Scents of Time is a company that acts as a "fragrance archaeologist." They have reconstructed numerous ancient perfumes by testing preserved samples, researching historical literature, and stirring up ancient recipes. Using contemporary tools such as gas layer chromatography and mass spectrometry, Scents of Time's managing director, perfumer David Pybus, chemically fingerprinted the ingredients present in one of Saalfeld's vials. After identifying the components of this perfume, he then carefully manipulated these known amounts and ingredients to transpose this scent for our contemporary tastes without altering the aromatic sensation of this lost perfume.

  Scent by Scents of Time

  Scents of Time often collaborates with larger fragrance houses to realise their products. This perfume was produced in partnership with Givaudan. I am indebted to Scents of Time for their booklet, Night Star, the Treasure of Titanic (2007), for providing much of the information found in this text.

- The smell of Mir
  On February 20, 1986, Russia launched a brave and unprecedented exploration of outer space called Mir. Mir, meaning both "peace" and "world", was designed under Soviet rule to float 350 kilometres above the Earth as an orbital research station. Mir's fifteen year mission resulted in thousands of exhaustive scientific experiments, performed by a rolling

roster of 104 cosmonauts and astronauts. To minimise waste, Mir was designed as an almost 100% recyclable environment. Even the humidity in the space station was chemically broken down and re-used. However, in this highly efficient and controlled environment there was one rogue stowaway that the Russians had not anticipated: smell.

George Aldrich is a nasalnaut. He works for NASA as a chemical specialist in a Molecular Desorption Analysis Laboratory at the White Sands Test Facility in New Mexico. His job is to smell everything that will travel in space shuttles, from teddy bears to toothpaste, to make sure that an object's odour is not too overwhelming for the capsule. The Russians don't have nasalnauts, but they did have lots of vodka that they took with them onto Mir. When the cosmonauts perspired, their sweat contained traces of the alcohol. This airborne alcohol then made its way through Mir's air filtration system, which was intended to recycle H20 into pure oxygen. However, a chemical by-product of the alcohol entering into the filtration process was the unintended production of formaldehyde. This is a noxious substance primarily used as a pickling agent, it is what Damien Hirst uses to submerge and preserve his animals. Over time, the filters in the recycling units became clogged with a damp mould and the pungent odour of pickling gym socks began to permanently waft through the cabin, making living conditions almost intolerable. With the scientists unable to open a window or stop drinking, Mir continued to stink until it was decommissioned and disintegrated in the upper atmosphere over Fiji on March 23, 2001.

Scent by Steven Pearce

- The smell of a meteorite
  In the late morning of September 15, 2007, something described as ranging in size from a basketball to a small car was seen streaking across the Peruvian sky. It landed in a farmer's wet field with a thud heard in the neighbouring town of Desaguadero, twenty kilometres away. The crater caused by the impact quickly filled with boiling turbid brown groundwater that was described by witnesses as giving off a strange and noxious odour. Immediately, the locals began to complain of ailments including dizziness, vomiting and skin lesions. Within days of the impact, over one hundred people were reported to be suffering due to the unexplained odour. And still there was no consensus about what had actually fallen from the sky to cause the stench. Initially, one hypothesis was that it was a missile launched by the neighbouring Chilean government, although this unprovoked attack on a quiet farming village seemed implausible[1]. Then it was reported in the Russian press that the malodorous fireball was caused by a downed United States KH-13 spy satellite. A radioactive isotope powers this satellite and, if it survived re-entry to Earth, would explain the reported illnesses as radiation poisoning. However, extensive tests of the site by numerous officials reported no traces of radiation. A further explanation came from the Knight Science Journalism website claiming it might be stinky panspermic alien microbes.

  After the dust settled, the initial overzealous estimate of the crater's size was accurately measured at thirteen meters (as opposed to the earlier report of over thirty meters), the number of victims suffering from ailments was downgraded from 150 to 30, and a more down to earth conclusion

was accepted. It was a meteorite that bore deeply enough into the soft mud to hit a pocket of arsenic. There are numerous arsenic deposits in Peru and it was gas from this deposit, slowly bubbling up through the groundwater, which released the stench.

Scent by Mark Buxton

1. The New York Times (New York), 20 September 2007.

- The plague shield
  Determining how disease spread was one of the most urgent questions of the middle ages. Today's health questions are evident in headlines concerned with how many glasses of wine are healthy to drink and how much red meat is safe to eat. Rather than heart disease or cancer, the top killer of the fourteenth century was the black plague, commonly assumed to be spread by its smell. With the span of the illness from contraction to expiration rarely taking more than three to four days, the black plague was a particularly nasty and swift killer. The black discharge seeping from a victim's infected glands was thought to carry a 'polluted air' or 'miasma'. It was this infected air that the healthy tried to contain and quarantine. Even the breath of a plague victim was considered mortal poison. To keep this murderous air at bay, a queer variety of olfactory protections akin to an intangible plague shield were medically prescribed to combat the disease.

  Christophe Laudamiel has re-created this shield. The following is a record of his process. "To compose this plague shield I began an extensive research of old texts. The scent informed by this study contains some vinegar as this was the purifying base used at the time. We reconstituted rose leaves using rose oil and true raspberry leaves. We added different elements commonly used at the time to try preventing the settling of the Yersinia pestis (plague) bacteria, such as beeswax, angelica, orange peel, and clove. Also present in the plague shield is a smoky feeling because many fires of aromatic wood were lit at the time to try to fend off the polluted air. The scent from these bonfires was thought to subsume the infected air, another popular belief of a population in distress of finding causes and remedies for a disease they did not biologically understand. Finally, we incorporated in this scent ingredients that happen to be gram-negative antibacterial (the plague bacteria is a gram-negative bacteria like E-coli). Some of these ingredients smell of thyme, and some of white lilies. Many fragrance ingredients, even rose oil, are naturally anti-bacterial. I wanted the scent not to smell offensive but, in fact, to include the elements that draw you in, like anything bad also has an aspect that attracts you."

  Scent by Christophe Laudamiel

  The New York Times (New York), 20 September 2007.

- The last breakfast
  On the morning of February 20, 1976, police officers Phillip Black and Donald Irwin were killed at a highway rest stop outside of Miami. The details leading up to this crime were the subject of a legal debate that continued throughout Jesse Tafero's fourteen-year incarceration for their

murders. Earlier that morning, Tafero, his girlfriend Sonia Jacobs, and their two young children accepted a ride from a friend, Walter Rhodes, who offered to take them to West Palm Beach. To get a break from driving, they pulled into a rest stop for a nap in the car. Patrolman Black approached the car for a routine check and saw the family along with Rhodes asleep inside. It is alleged that Patrolman Black saw a gun in the car. He woke them up and instructed Rhodes and Tafero to get out of the vehicle. Soon after Black made this request, both he and Irwin were shot.

Gun-powder evidence swabbed from Tafero, Jacobs, and Rhodes indicated that only Rhodes had fired a weapon. Two eyewitnesses testified that as the shots were fired, Tafero was being held over the hood of the car by one of the officers. Both the gunpowder evidence and the eyewitness testimonies were suppressed at the trials of Tafero and Jacobs. Rhodes testified that both Tafero and Jacobs were guilty of the murders. In exchange for his testimony, Rhodes was allowed to plead guilty to second-degree murder, thereby avoiding the death penalty. Jacobs and Tafero were found guilty of murder in the first degree and sentenced to death by electrocution. In 1977, 1979, and 1982, Walter Rhodes recanted his earlier testimony against Tafero. In these statements, Rhodes confessed that he, not Tafero, had shot the officers. Eventually, Rhodes reverted to his original testimony. Jesse Tafero was executed on May 4, 1990; he was forty-four years old. This is the smell of his last meal: scrambled eggs, fried pepperoni, toasted Italian bread, two tomatoes, steamed broccoli, asparagus tips, strawberry shortcake with whipped cream, whole milk, and Lipton tea. Jacobs was eventually released from prison in 1992 when the courts recognised that Rhodes failed his original 1976 polygraph test in which he denied the murders. Had this evidence been known to the court of appeals prior to 1990, it is probable that Tafero's conviction would also have been overturned.

Scent by Steven Pearce

- The smell of communism
  The closed market system of the Deutsche Democratic Republic imposed severe restrictions on the production, importation, and sale of goods in former East Berlin. The effects of this system were felt in everything from buying a house to a bar of soap, so with these restrictions came a smell. It is recognised as the smell of communism and it was (and still is) found in parts of Poland, former East Berlin and regional provinces of China like Guanzhow.

  These places, like closets unopened for years, languished in the stale air of imposed uniformity. Enclosing this smell was the Berlin Wall with its political division as strong above ground as it was immediately below. Berlin's subway system was designed before the iron curtain. During the cold war many of the subway lines going from east to west were closed to eliminate the possibility of defection. However, Friedrichstraße Station, located in East Berlin, remained open as a transfer station for West Berliners. Walking across Friedrichstraße's platform to the connecting train was one of the few places for those of the free world to sniff this hint of communism.

  Scent by Sissel Tolaas

If there ever was
An exhibition of extinct and impossible smells

- The first scratch-n-sniff
  During the research leading up to this project, I read just about every book I could lay my hands on that was devoted to the topic of scent and its significance to ancient and modern cultures. The subjects covered by these resources ranged from academic discussions of memory and nostalgia to anatomical drawings of nostrils. However, over and over I found that one thing was missing. I could find no reference, either flippant or formal, to scratch–n-sniff. It's true, I don't really need a book devoted to this topic I already have one. It's tucked away in a box in the corner of my parents' basement and it's filled with scratch-n-sniff stickers. If I were to go there now I am sure I would find a synthetic smorgasbord waiting under my fingernail. Who can forget that fluorescent odour of banana, the slice of pepperoni pizza, the square of chocolate that never really smelled like chocolate, and the smooth mellow root beer foaming over the side of that thick glass mug? We owe these pleasures to Dr. Gayle Matson[1].

  In the 1960s, he was working as an organic chemist in the Carbonless Paper/Related Products division of 3M (Minnesota Mining and Manufacturing Company). What Matson was trying to figure out was a way of making duplicate copies without the use of carbon paper. Carbon paper is the stuff we sometimes use to fill out delivery forms or insurance waivers. It is the subject of the conversation, "No, you keep the pink one and we'll hold onto the blue one for our files." What Matson discovered was that if you spread tiny plastic beads (say forty million per square inch) of encapsulated ink onto a paper surface and then rubbed or scratched this surface with your fingernail, it appeared as though your finger wrote like a pen. Really what was happening was that the pressure of your finger broke open the ink beads as it moved across the page. The penny dropped when 3M's Public Relations department asked Matson to replace the ink he was using with a fragrance. First he tried strawberry.

  1. 3M Megaphone (St. Paul), 9 May 1980.

If There Ever Was: a book of extinct and impossible smells accompanies the exhibition and is published by Art Editions North (ISBN: 978-0-9557478-0-9.). This hardback publication is on sale at Reg Vardy Gallery (rrp £12.00) and is distributed by Cornerhouse, www.cornerhouse.org. The Reg Vardy Gallery is open: Tuesday 10 am to 8 pm, Wednesday to Friday 10 am to 6 pm and Saturday by appointment. For more information please call 0191 515 2128, email Rob Blackson or visit www.regvardygallery.org.

Opening: Tuesday, 29 April 6-8
Artist talk: Tuesday, 29 April 5-6
Draw What You Smell: Tuesday, 20 May 1-3 pm
Exhibition continues: 30 April – 6 June 2008

Reg Vardy Gallery
University of Sunderland
Ashburne House
Ryhope Road
Sunderland
SR2 7EF
www.regvardygallery.org