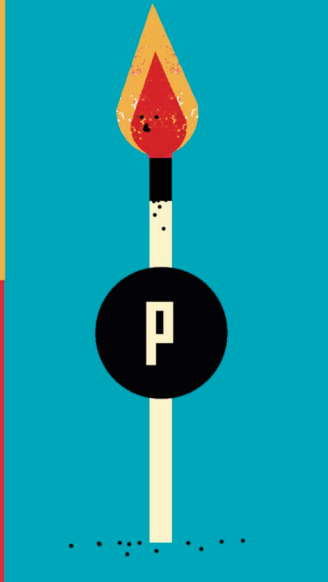
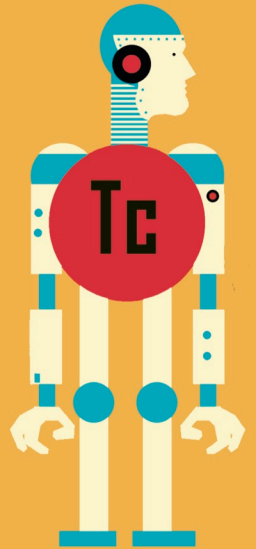


THE 
EXTRAORDINARY
ELEMENTS
POSTCARD COLLECTION

COLIN STUART



XIMO ABADÍA

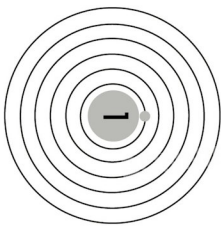


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HYDROGEN



THE REACTIVE NON-METALS

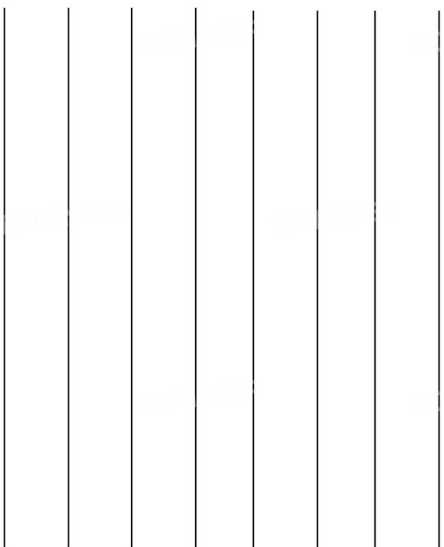


HYDROGEN

The element that fuels the majority of stars.

THE EXTRAORDINARY ELEMENTS

COLIN STUART AND XIMO ABADIA

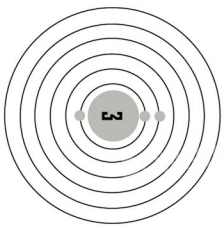


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LITHIUM



THE ALKALI METALS



THE EXTRAORDINARY ELEMENTS

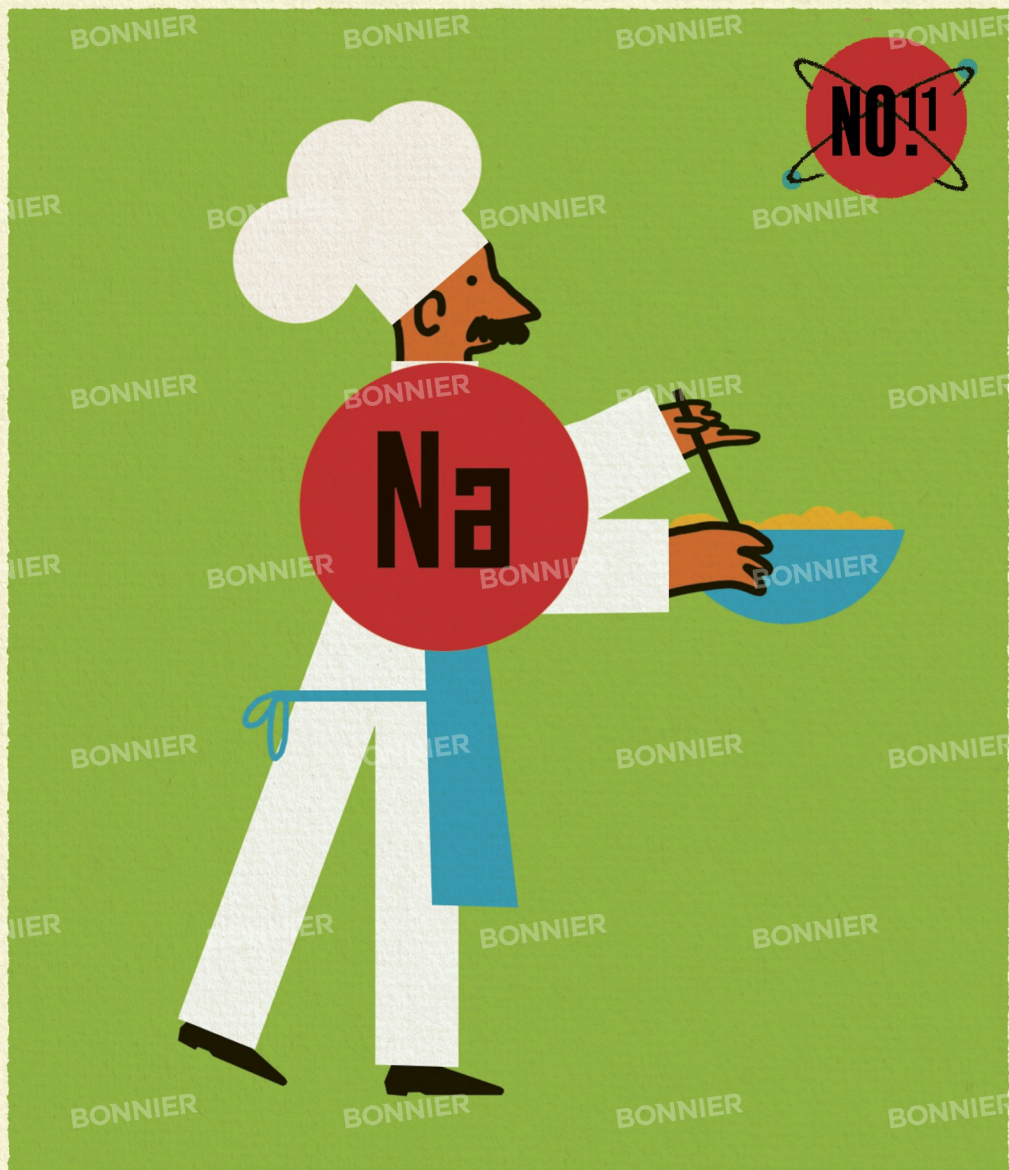
COLIN STUART AND XIMO ABADIA

LITHIUM

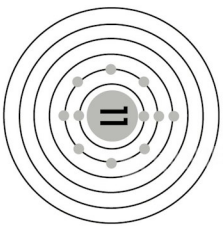
This element creates the red colour in fireworks and is the title of a famous Nirvana single.

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SODIUM



THE ALKALI METALS



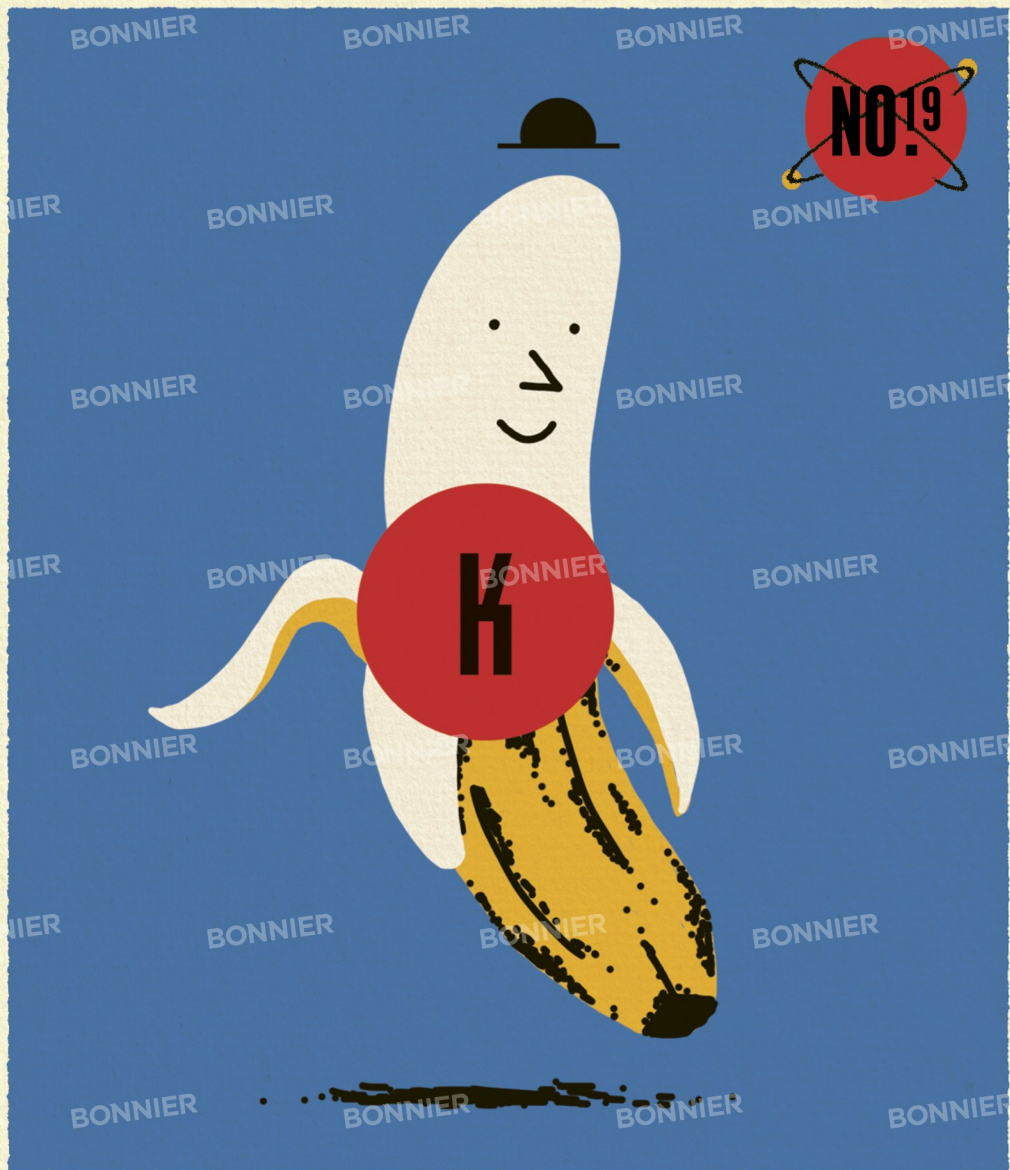
THE EXTRAORDINARY ELEMENTS

COLIN STUART AND XIMO ABADIA

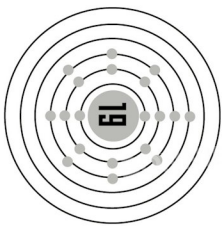
SODIUM This is often used in baking as sodium bicarbonate.

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POTASSIUM



THE **ALKALI METALS**



THE EXTRAORDINARY ELEMENTS

COLIN STUART AND XIMO ABADIA

POTASSIUM

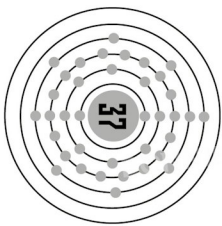
Bananas are rich in potassium, which is vital to human life.

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RUBIDIUM



THE ALKALI METALS



THE EXTRAORDINARY ELEMENTS

COLIN STUART AND XIMO ABADIA

RUBIDIUM

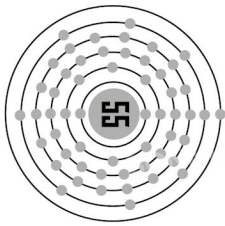
This is an excellent detector of cancerous cells.

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CAESIUM



THE ALKALI METALS



COLIN STUART AND XIMO ABADIA

THE EXTRAORDINARY ELEMENTS

CAESIUM

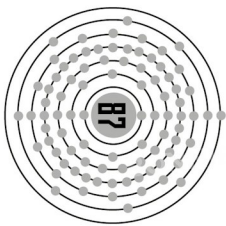
Atomic caesium clocks are the most accurate on Earth.

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FRANCIUM



THE ALKALI METALS



THE EXTRAORDINARY ELEMENTS

COLIN STUART AND XIMO ABADIA

FRANCIUM

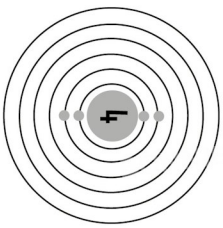
This element was discovered by French physicist, Marguerite Perey.

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BERYLLIUM



THE ALKALI EARTH METALS



BERYLLIUM

This element is used in weather-monitoring satellites.

THE EXTRAORDINARY ELEMENTS

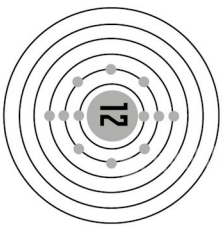
COLIN STUART AND XIMO ABADIA

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MAGNESIUM



THE ALKALI EARTH METALS



THE EXTRAORDINARY ELEMENTS

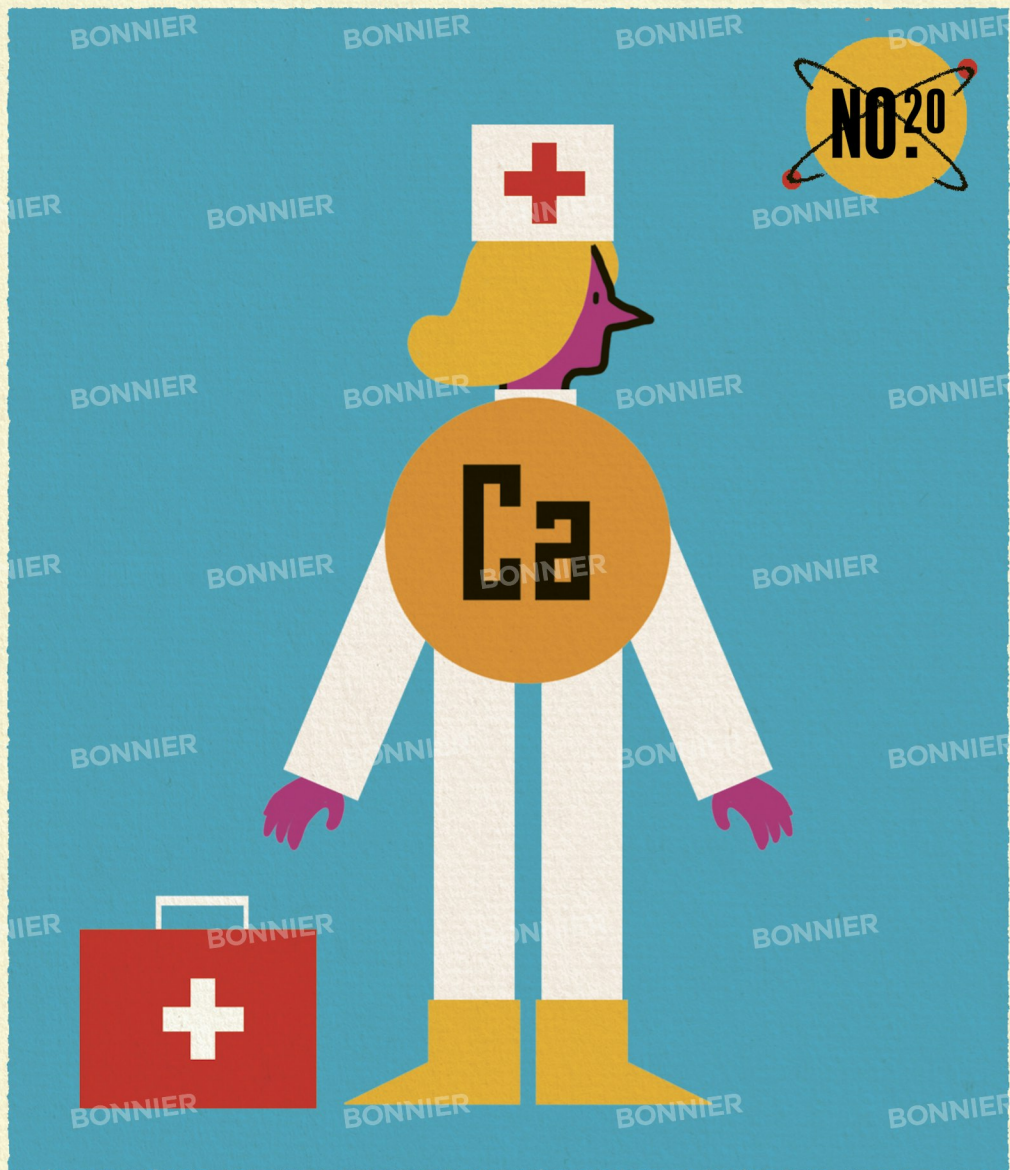
COLIN STUART AND XIMO ABADIA

MAGNESIUM

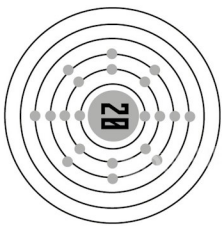
A key component of chlorophyll in plants.

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CALCIUM



THE ALKALI EARTH METALS



CALCIUM

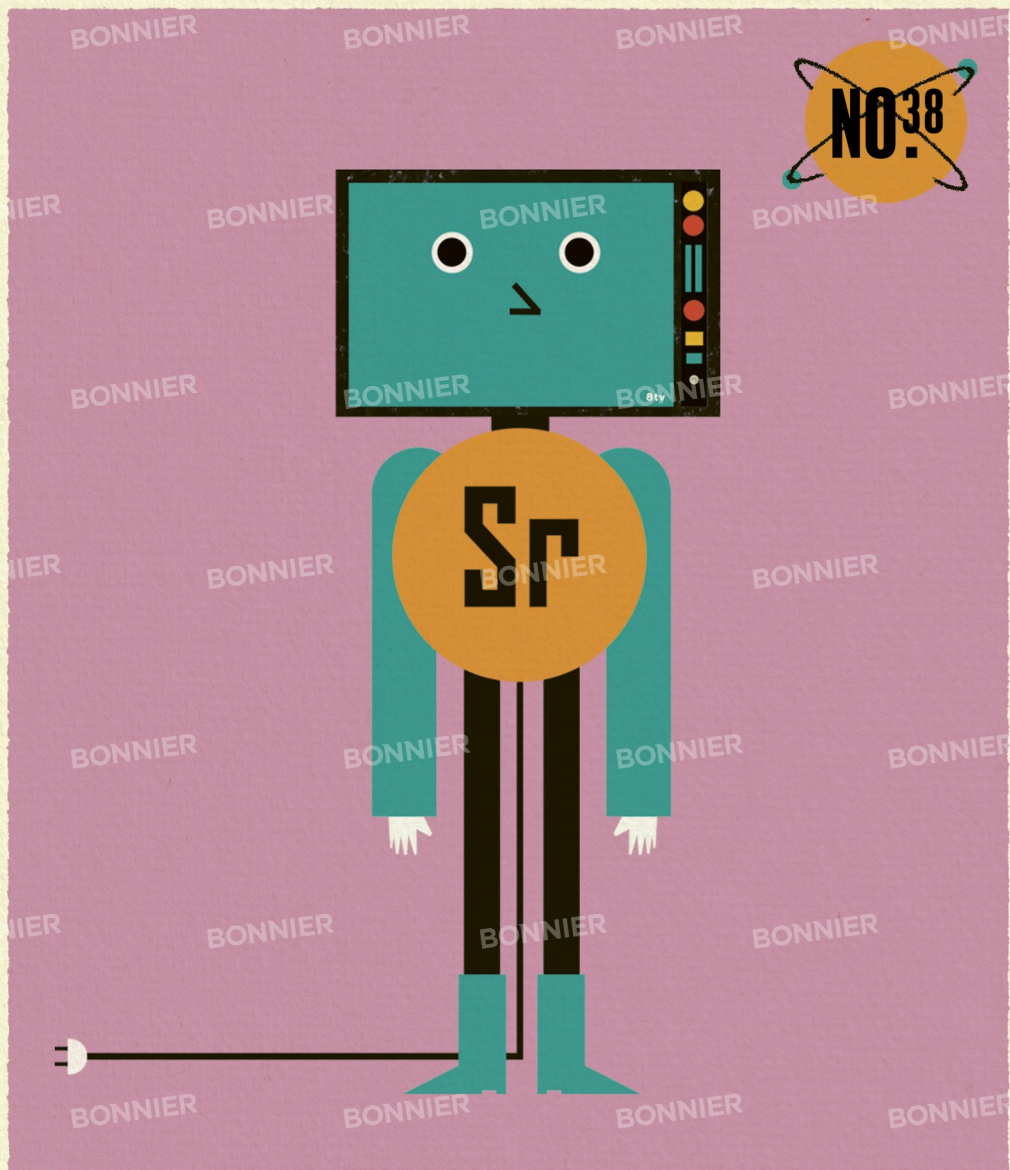
Medics often use calcium sulfate as plaster.

THE EXTRAORDINARY ELEMENTS

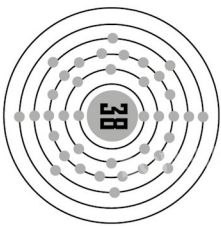
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STRONTIUM



THE ALKALI EARTH METALS



STRONTIUM

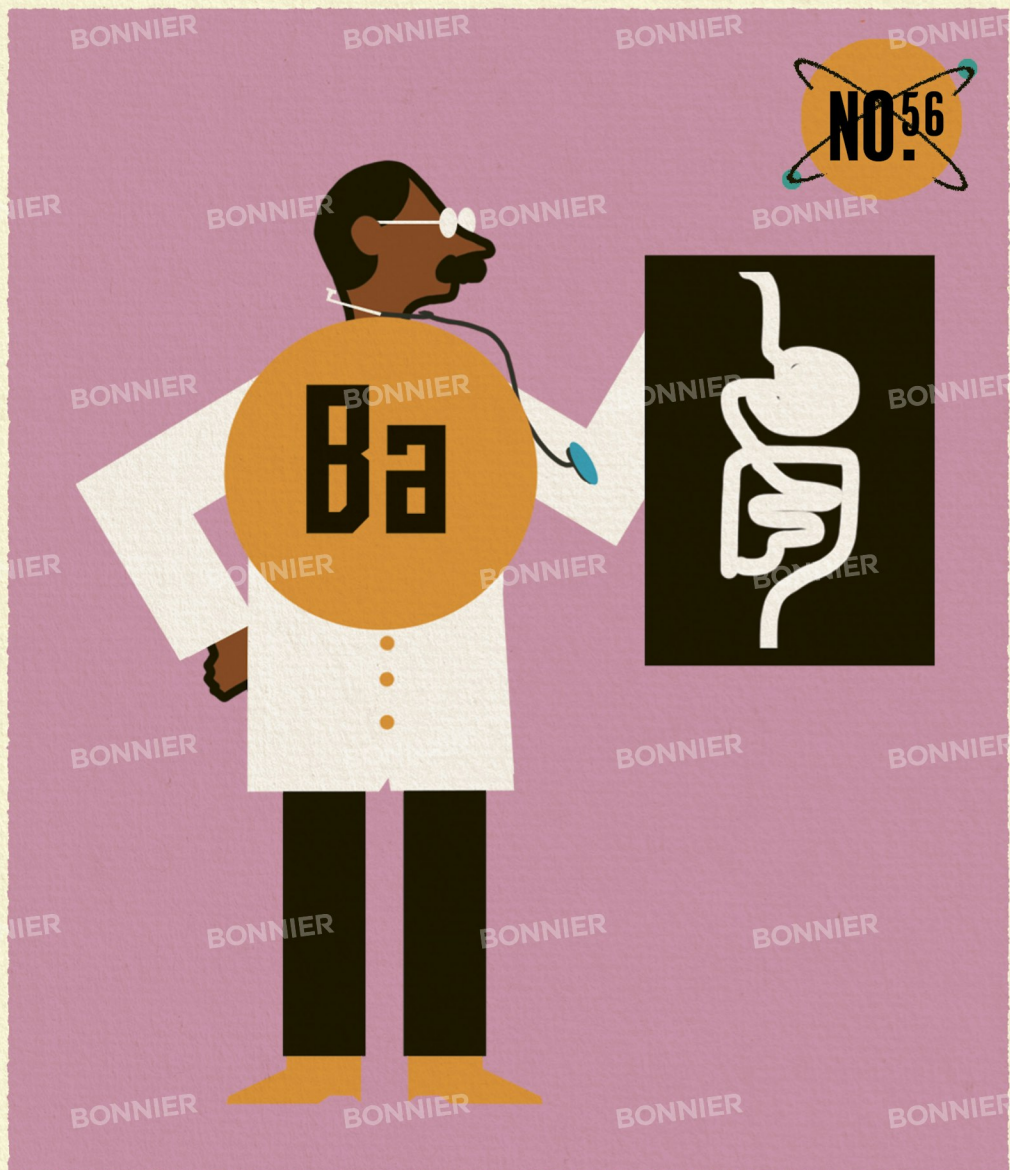
This silvery metal is often used in TV sets.

THE EXTRAORDINARY ELEMENTS

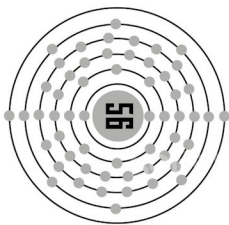
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BARIUM



THE ALKALI EARTH METALS



THE EXTRAORDINARY ELEMENTS

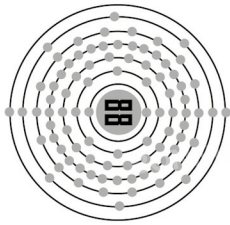
COLIN STUART AND XIMO ABADIA

BARIUM When swallowed, barium makes abnormalities on X-rays appear clearly. The Extraordinary Elements • © Colin Stuart and Ximo Abadia and Big Picture Press

RADIUM



THE ALKALI EARTH METALS



THE EXTRAORDINARY ELEMENTS

COLIN STUART AND XIMO ABADIA

RADIUM

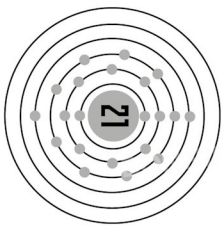
This element's radiance was often used for glow-in-the-dark objects.

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SCANDIUM



THE TRANSITION METALS



THE EXTRAORDINARY ELEMENTS

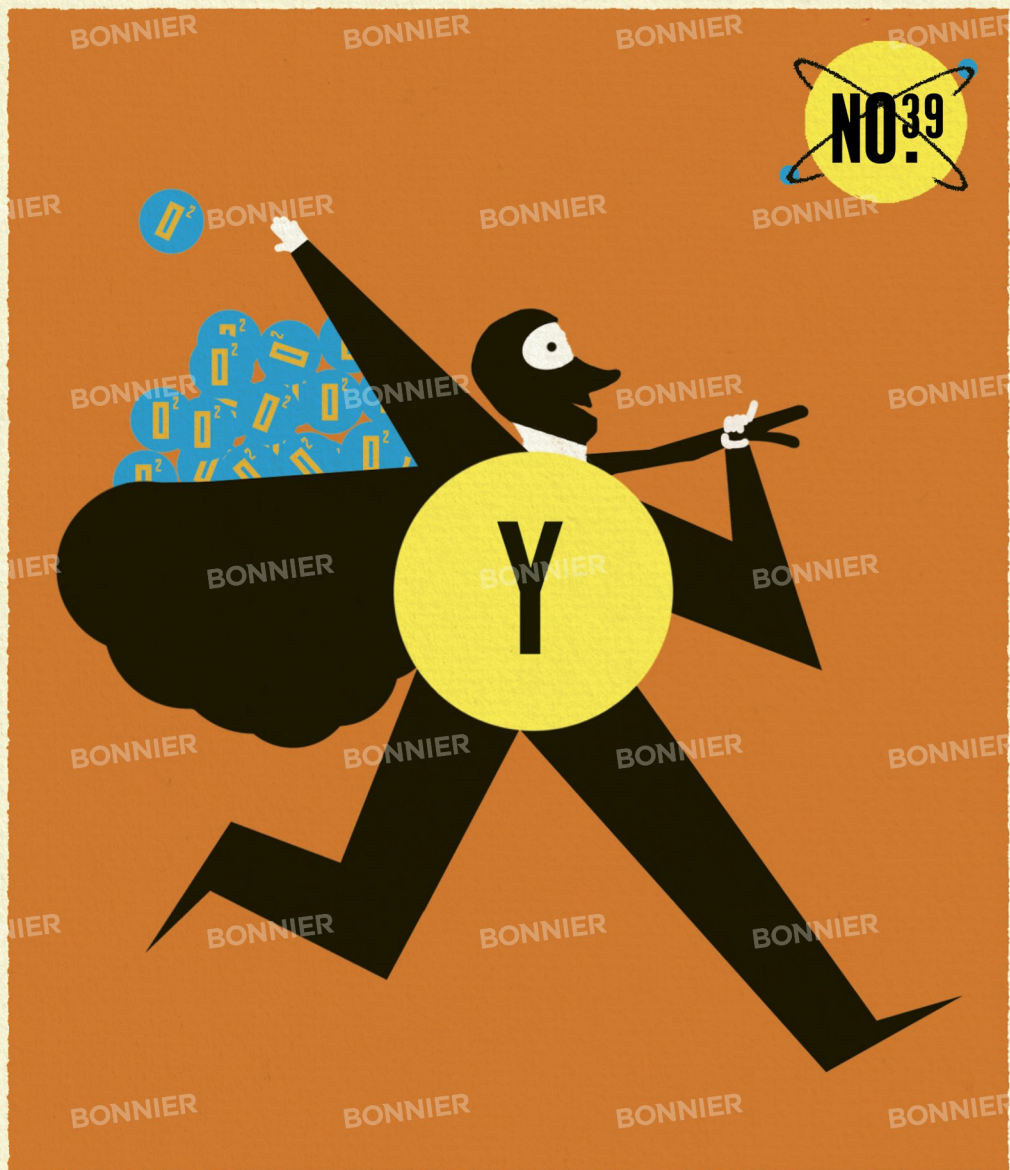
COLIN STUART AND XIMO ABADIA

SCANDIUM

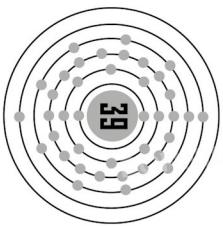
Scandium alloys are often used in lightweight sports equipment.

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YTTRIUM



THE **TRANSITION METALS**



THE EXTRAORDINARY ELEMENTS

COLIN STUART AND XIMO ABADIA

YTRIUM

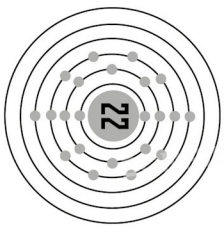
This element is known as the 'oxygen thief' for its ability to dissolve oxygen.

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TITANIUM



THE TRANSITION METALS



THE EXTRAORDINARY ELEMENTS

COLIN STUART AND XIMO ABADIA

TITANIUM

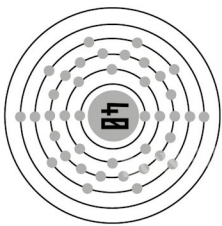
Super strong and light, this element is often used in aircraft.

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ZIRCONIUM



THE TRANSITION METALS



THE EXTRAORDINARY ELEMENTS

COLIN STUART AND XIMO ABADIA

ZIRCONIUM

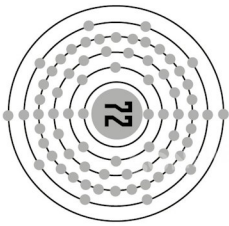
Resistant to corrosion, zirconium is often used in surgeons' tools.

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HAFNIUM



THE **TRANSITION METALS**



HAFNIUM

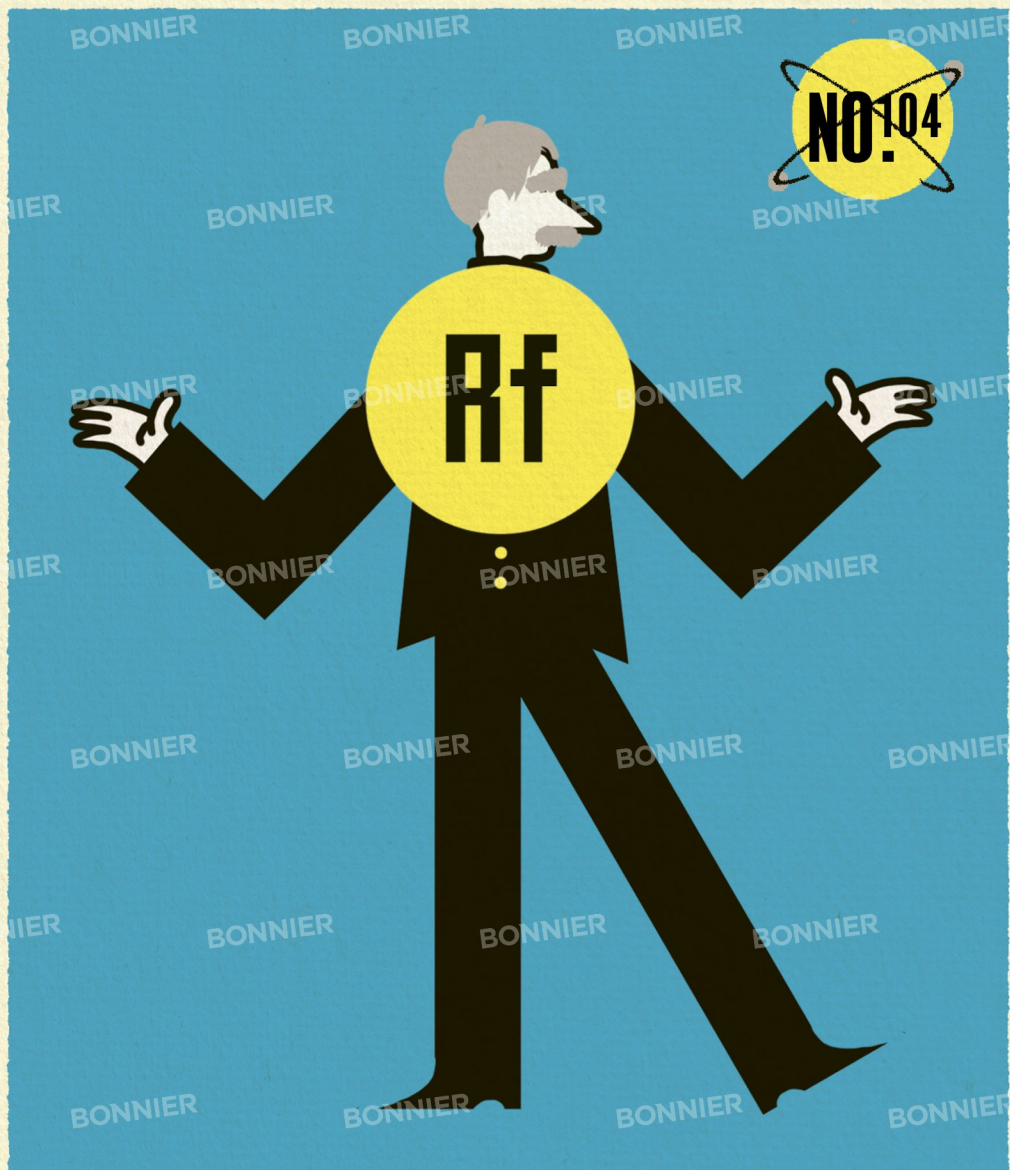
This element is useful for space rocket engines due to its high melting point.

THE EXTRAORDINARY ELEMENTS

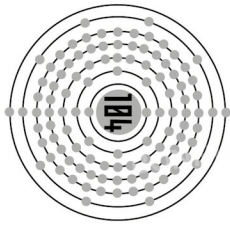
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RUTHERFORDIUM



THE **TRANSITION METALS**



THE EXTRAORDINARY ELEMENTS

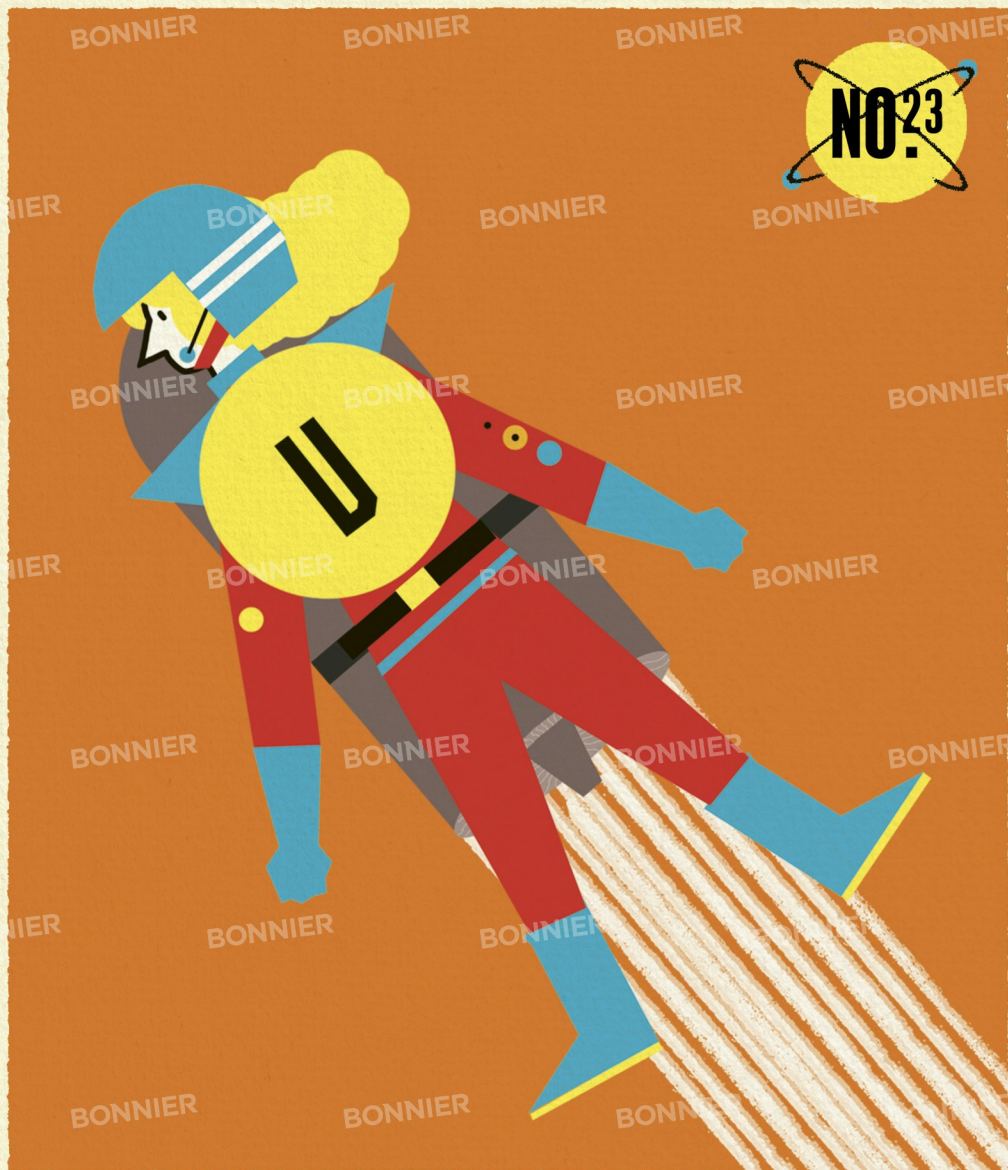
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RUTHERFORDIUM

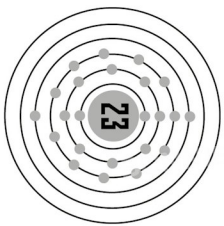
Named after Ernest Rutherford, who studied atomic structure.

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VANADIUM



THE **TRANSITION METALS**



VANADIUM

An alloy of vanadium is found in jet engines.

THE EXTRAORDINARY ELEMENTS

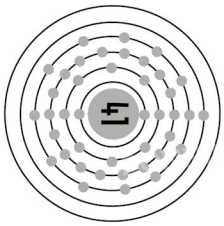
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NIOBIUM



THE TRANSITION METALS



THE EXTRAORDINARY ELEMENTS

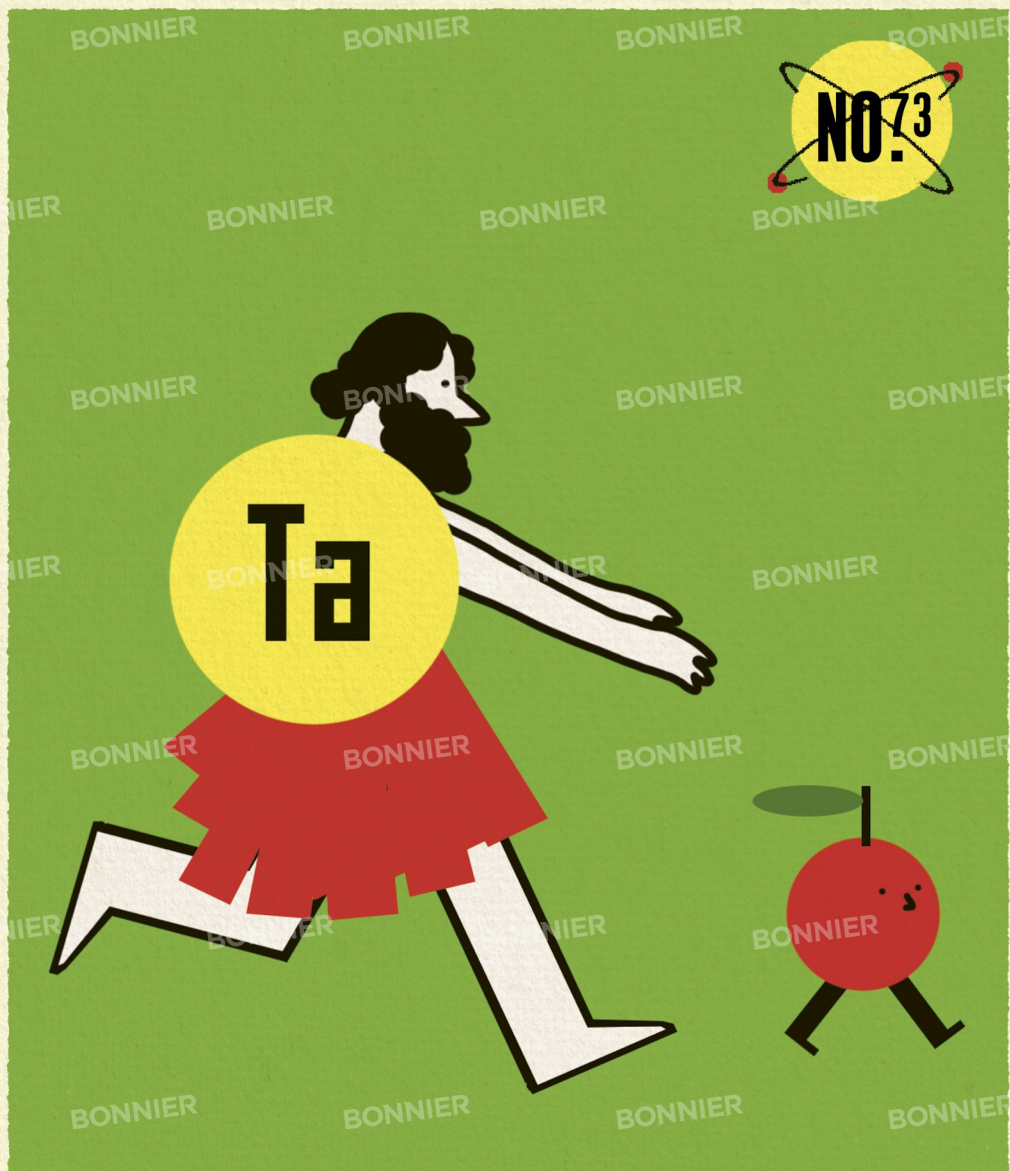
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NIOBIUM

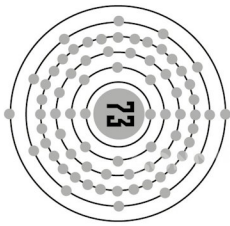
Named after the Greek goddess Niobe, niobium is often found with tantalum (named after the Greek god Tantalus).

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TANTALUM



THE TRANSITION METALS



THE EXTRAORDINARY ELEMENTS

COLIN STUART AND XIMO ABADIA

TANTALUM

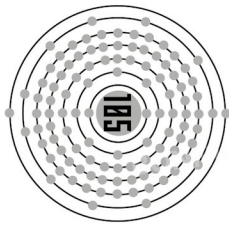
Named after the unfortunate Greek god Tantalus, who was punished by forever reaching for fruit that is just beyond reach.

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DUBNIUM



THE TRANSITION METALS



THE EXTRAORDINARY ELEMENTS

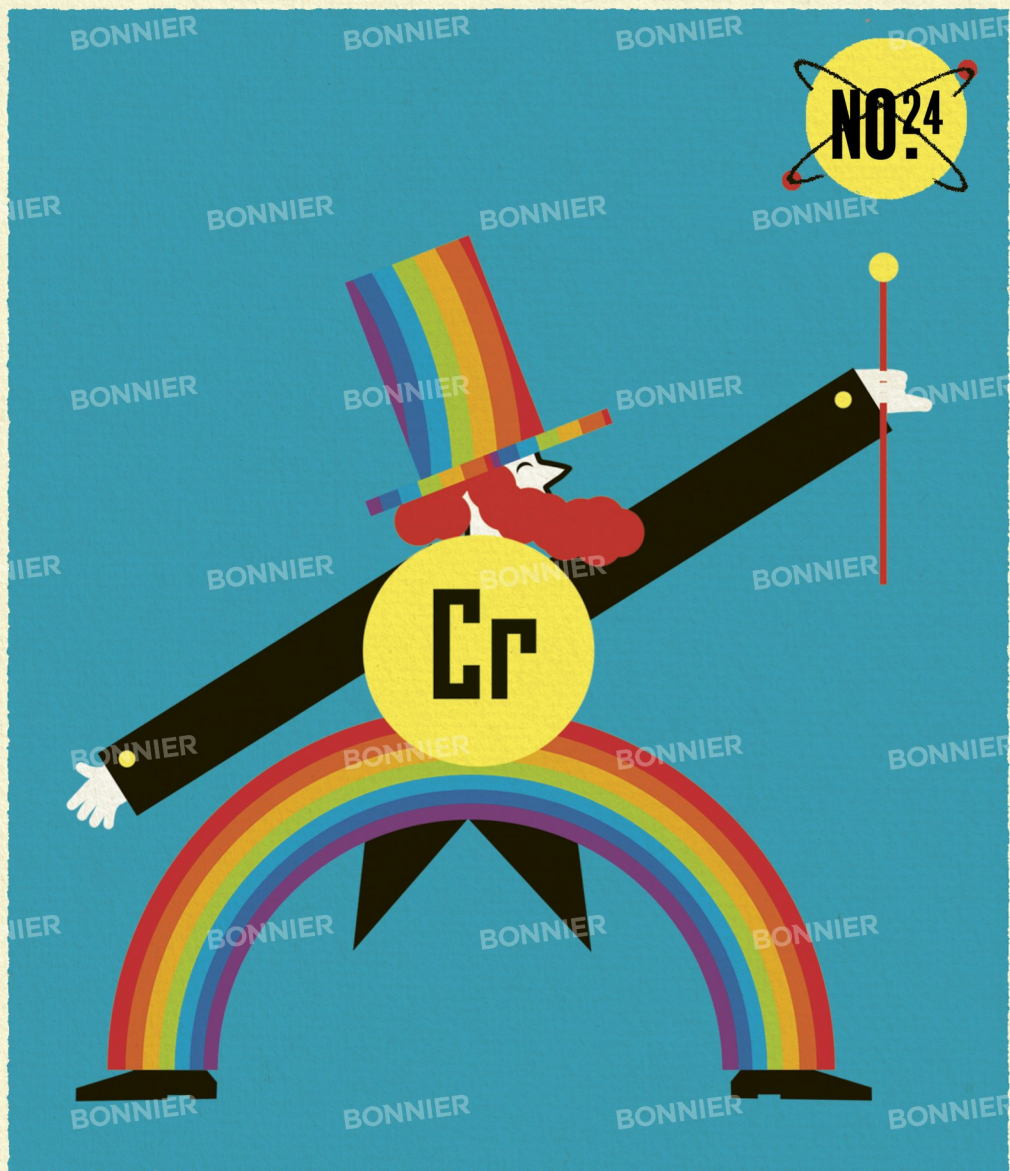
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DUBNIUM

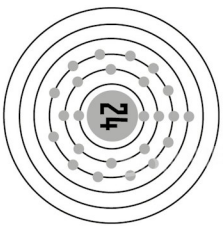
Named after the Russian town Dubno, home to Joint Institute for Nuclear Research.

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CHROMIUM



THE TRANSITION METALS



CHROMIUM

Chromium compounds come in a rainbow of colours.

THE EXTRAORDINARY ELEMENTS

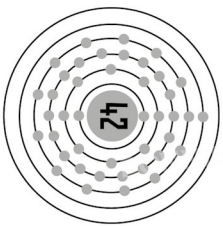
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MOLYBDENUM



THE TRANSITION METALS



THE EXTRAORDINARY ELEMENTS

COLIN STUART AND XIMO ABADIA

MOLYBDENUM

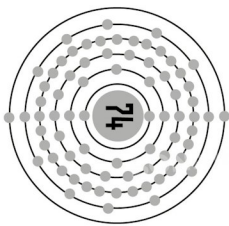
It is impossible to digest food without this element, which coincidentally is also found in steel cutlery.

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TUNGSTEN



THE TRANSITION METALS



THE EXTRAORDINARY ELEMENTS

COLIN STUART AND XIMO ABADIA

TUNGSTEN

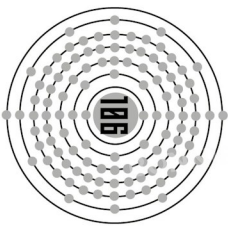
The chemical symbol 'W' comes from the German word 'wolfram', meaning wolf.

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SEABORGIUM



THE **TRANSITION METALS**



THE EXTRAORDINARY ELEMENTS

COLIN STUART AND XIMO ABADIA

SEABORGIUM Named after Glenn Seaborg, who in part discovered ten transuranic elements.

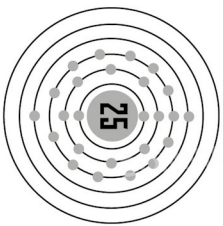
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MANGANESE

~~NO. 25~~

Mn

THE TRANSITION METALS



MANGANESE

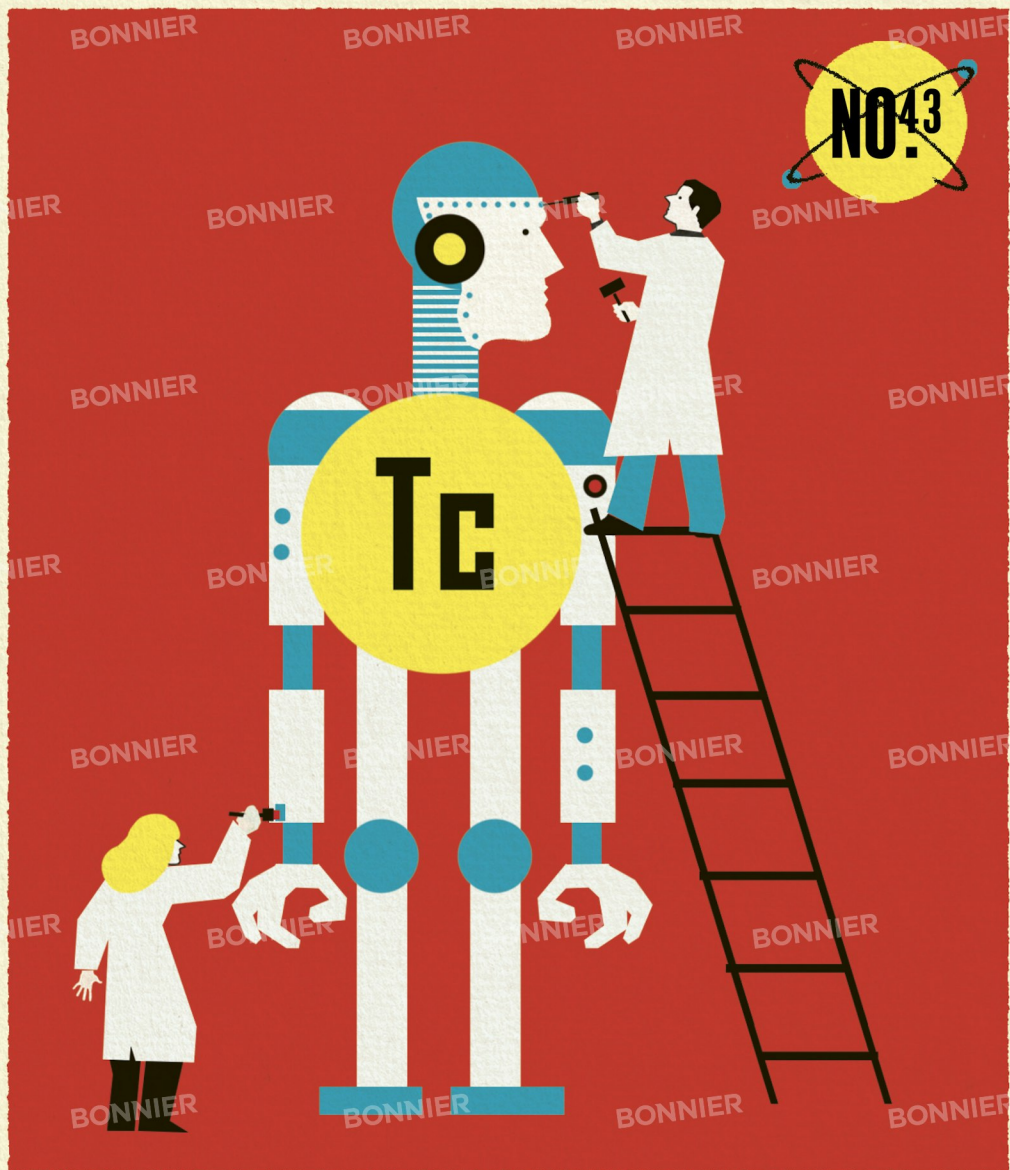
Pigments of this element were used in cave paintings.

THE EXTRAORDINARY ELEMENTS

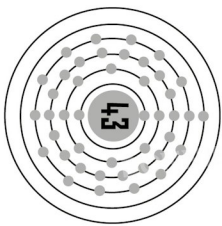
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TECHNETIUM



THE TRANSITION METALS



THE EXTRAORDINARY ELEMENTS

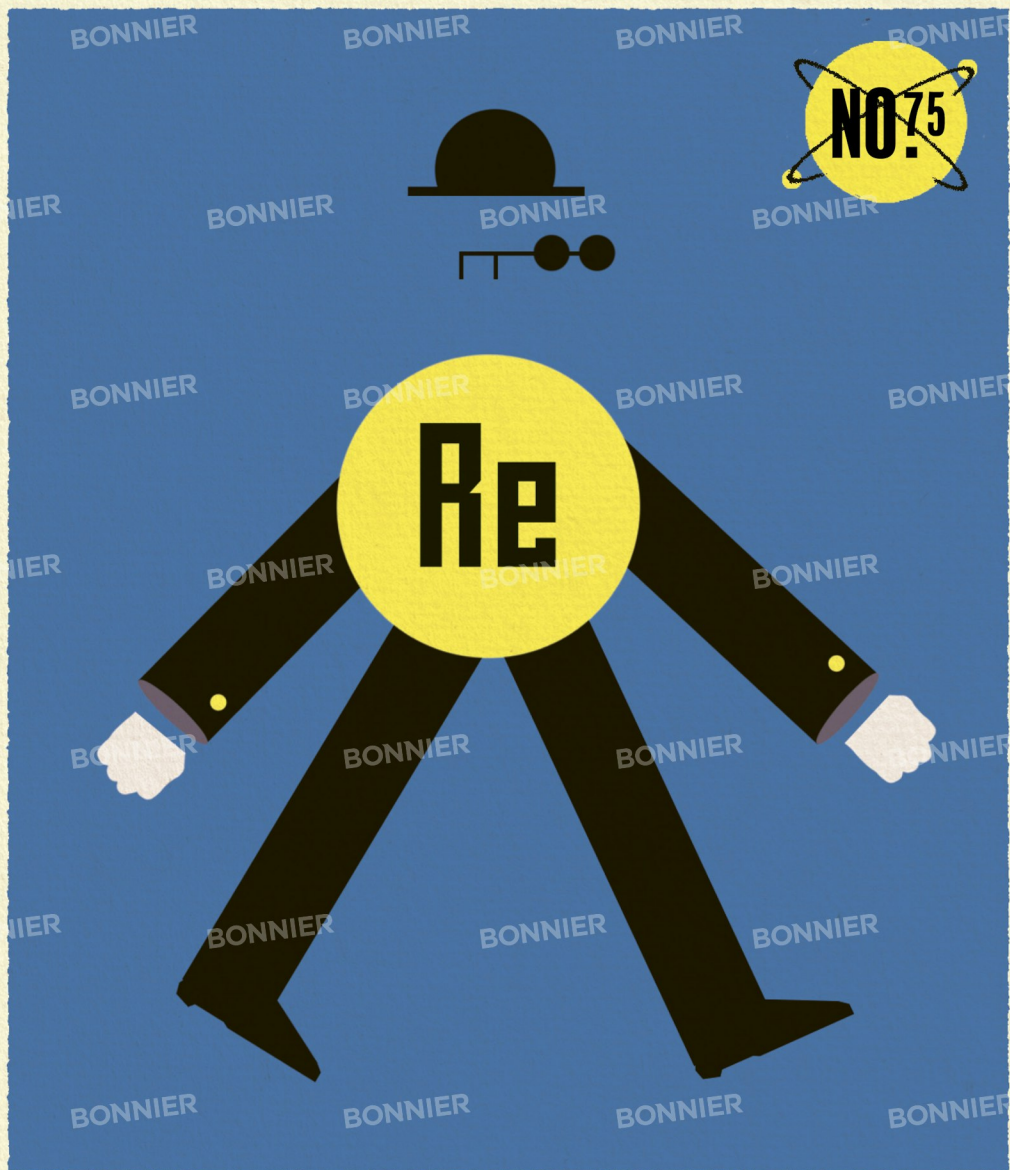
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TECHNETIUM

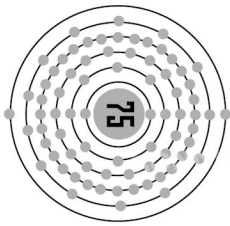
This was the first element to be manufactured by humans.

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RHENIUM



THE **TRANSITION METALS**



RHENIUM

Difficult to find, this is known as the 'invisible element'.

THE EXTRAORDINARY ELEMENTS

COLIN STUART AND XIMO ABADIA

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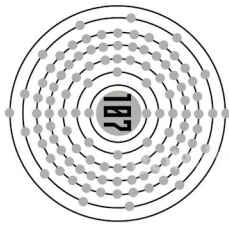
BOHRIUM

~~NO. 107~~

Bh



THE TRANSITION METALS



THE EXTRAORDINARY ELEMENTS

COLIN STUART AND XIMO ABADIA

BOHRNIUM

Named after physicist Niels Bohr who studied atomic structure.

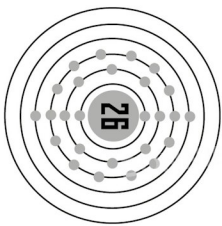
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IRON

~~NO. 26~~

Fe

THE TRANSITION METALS



THE EXTRAORDINARY ELEMENTS

COLIN STUART AND XIMO ABADIA

IRON Super strong, this element is also found in red blood cells.

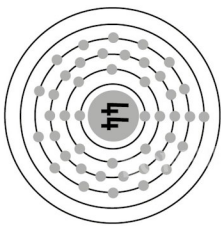
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RUTHENIUM

NO. 44

Ru

THE TRANSITION METALS



RUTHENIUM

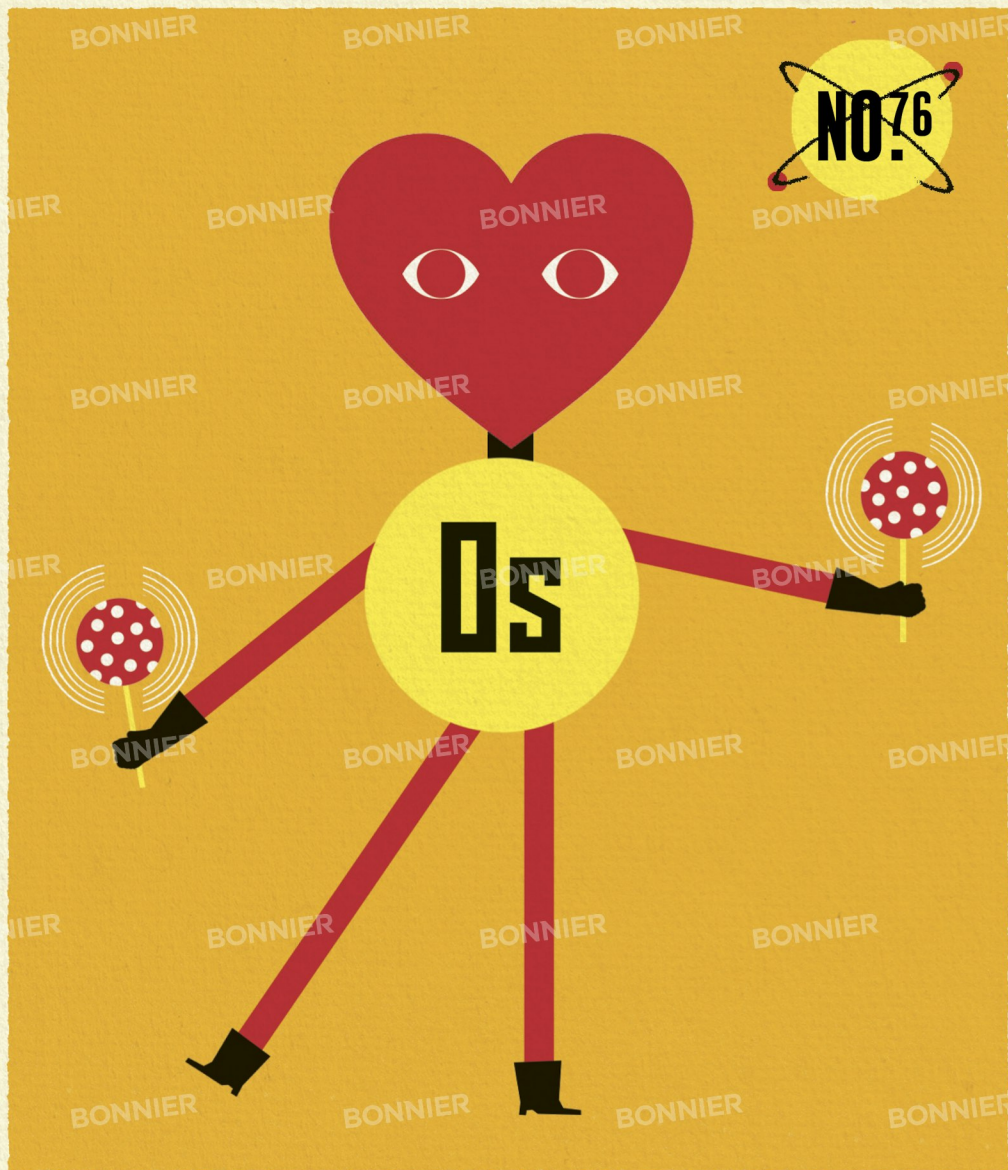
Sourced in Russia, ruthenium is one of the rarest metals.

THE EXTRAORDINARY ELEMENTS

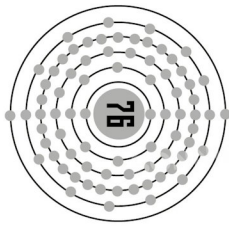
COLIN STUART AND XIMO ABADIA

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OSMIUM



THE TRANSITION METALS



THE EXTRAORDINARY ELEMENTS

COLIN STUART AND XIMO ABADIA

OSMIUM

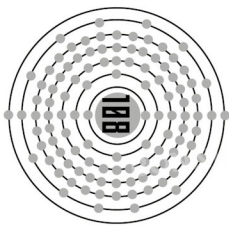
This element is used in pacemakers and replacement heart valves.

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HASSIUM

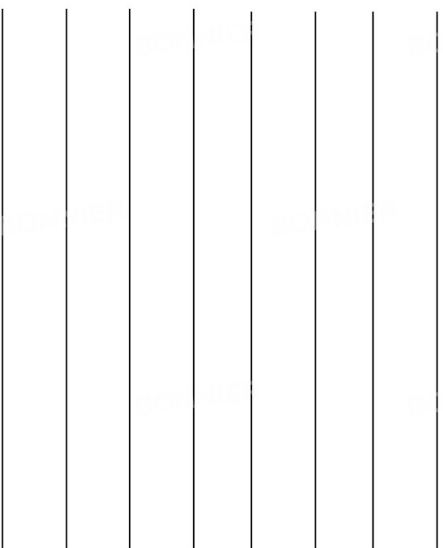


THE TRANSITION ◊ METALS



THE EXTRAORDINARY ELEMENTS

COLIN STUART AND XIMO ABADIA



HASSIUM

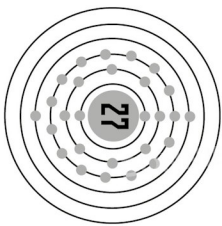
Named for the German state of Hesse where the Heavy Ion Research centre is based.

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COBALT



THE TRANSITION METALS



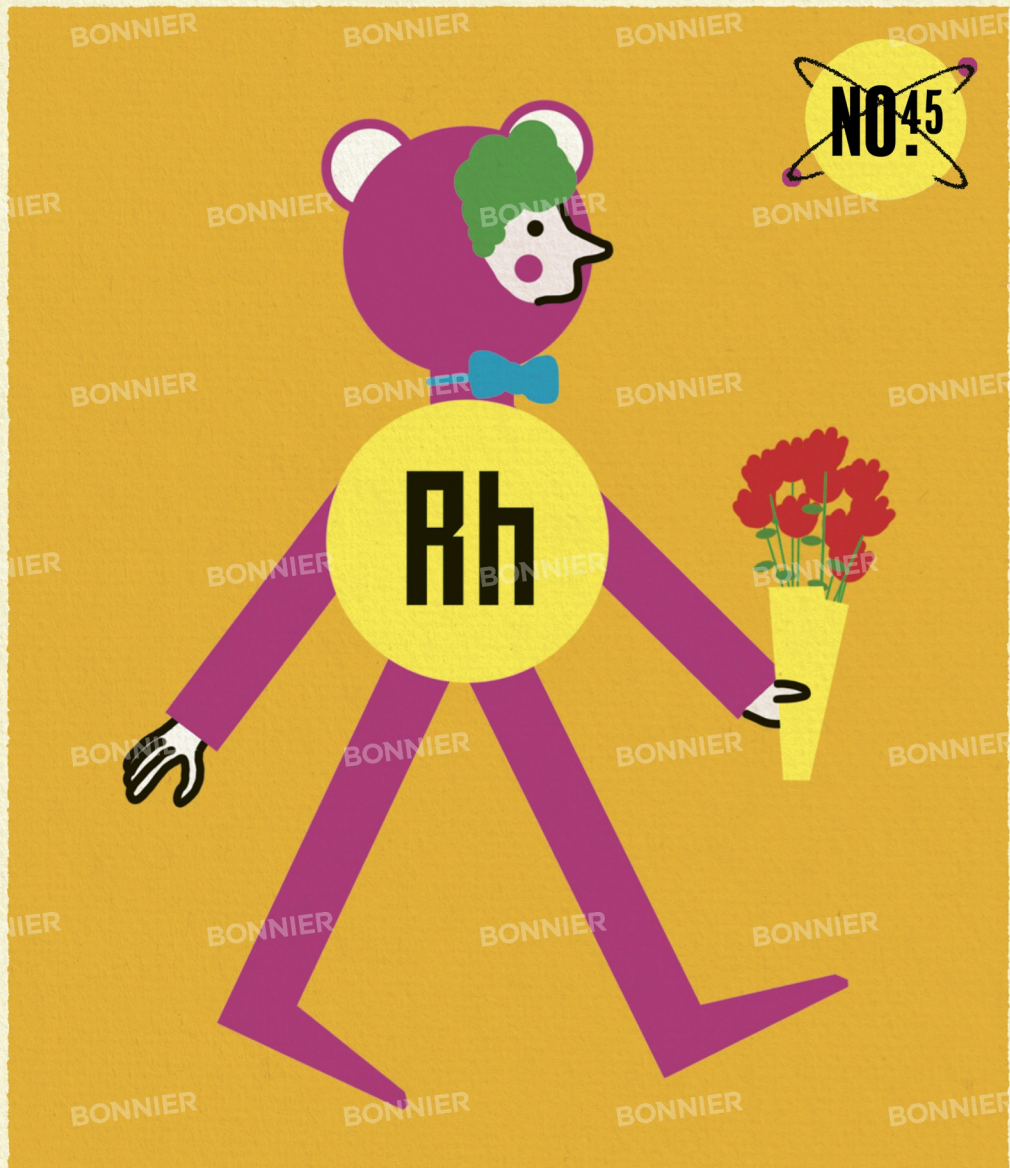
THE EXTRAORDINARY ELEMENTS

COLIN STUART AND XIMO ABADIA

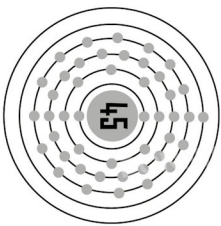
COBALT This element was considered mischievous by miners who often mistook it for silver. Its name is derived from the German 'kobold', meaning 'goblin'.

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RHODIUM



THE TRANSITION METALS



RHODIUM

Named after the Greek word for 'rose' due to its pink hue.

THE EXTRAORDINARY ELEMENTS

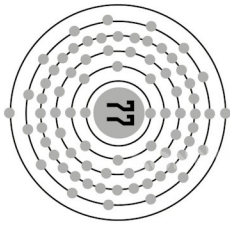
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IRIDIUM



THE TRANSITION METALS



THE EXTRAORDINARY ELEMENTS

COLIN STUART AND XIMO ABADIA

IRIDIUM

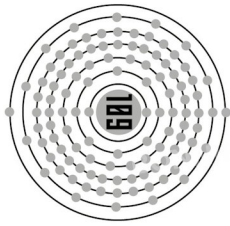
Geologists use this element to evidence mass extinction. It is rare on Earth, but abundant in asteroids, suggesting an asteroid strike may have wiped out the dinosaurs.

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MEITNERIUM



THE SUPER-HEAVIES



MEITNERIUM

Named after the Austrian physicist Lise Meitner.

THE EXTRAORDINARY ELEMENTS

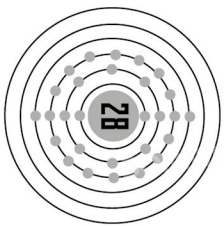
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The Extraordinary Elements • © Colin Stuart and Ximo Abadia and Big Picture Press

NICKEL

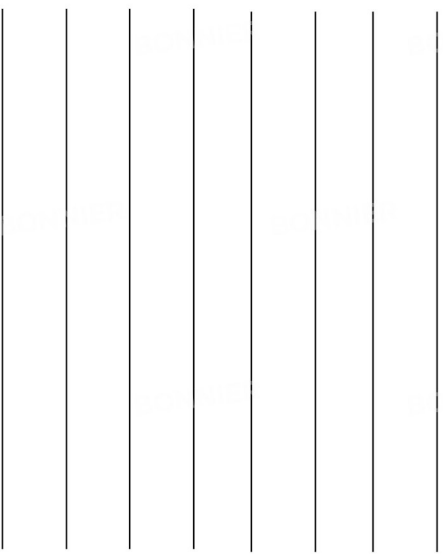


THE TRANSITION METALS



THE EXTRAORDINARY ELEMENTS

COLIN STUART AND XIMO ABADÍA



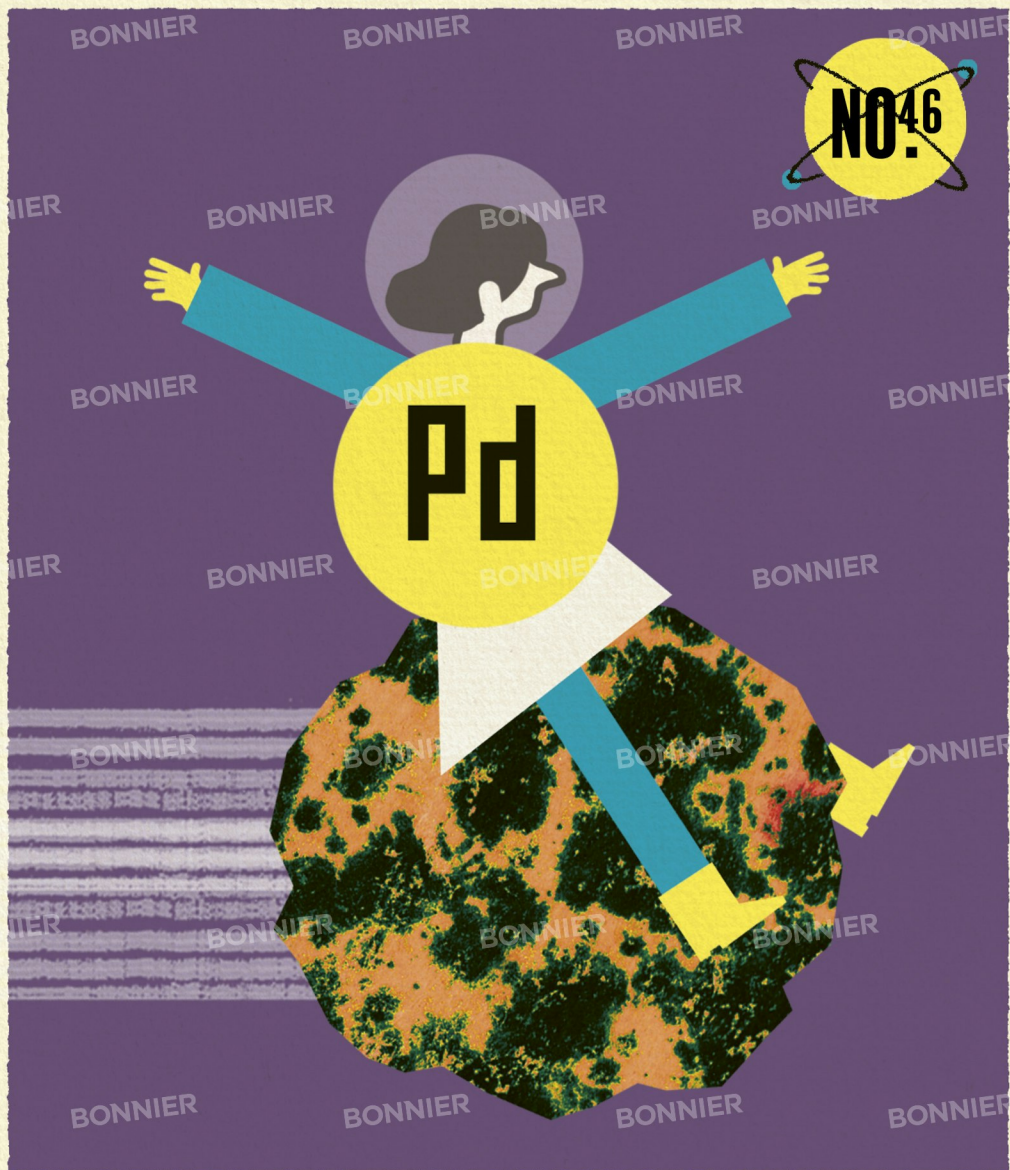
NICKEL

Found in electric guitar strings, creating a distinctive sound.

Nickel strings were famously used by Jimi Hendrix.

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PALLADIUM



THE TRANSITION METALS



PALLADIUM

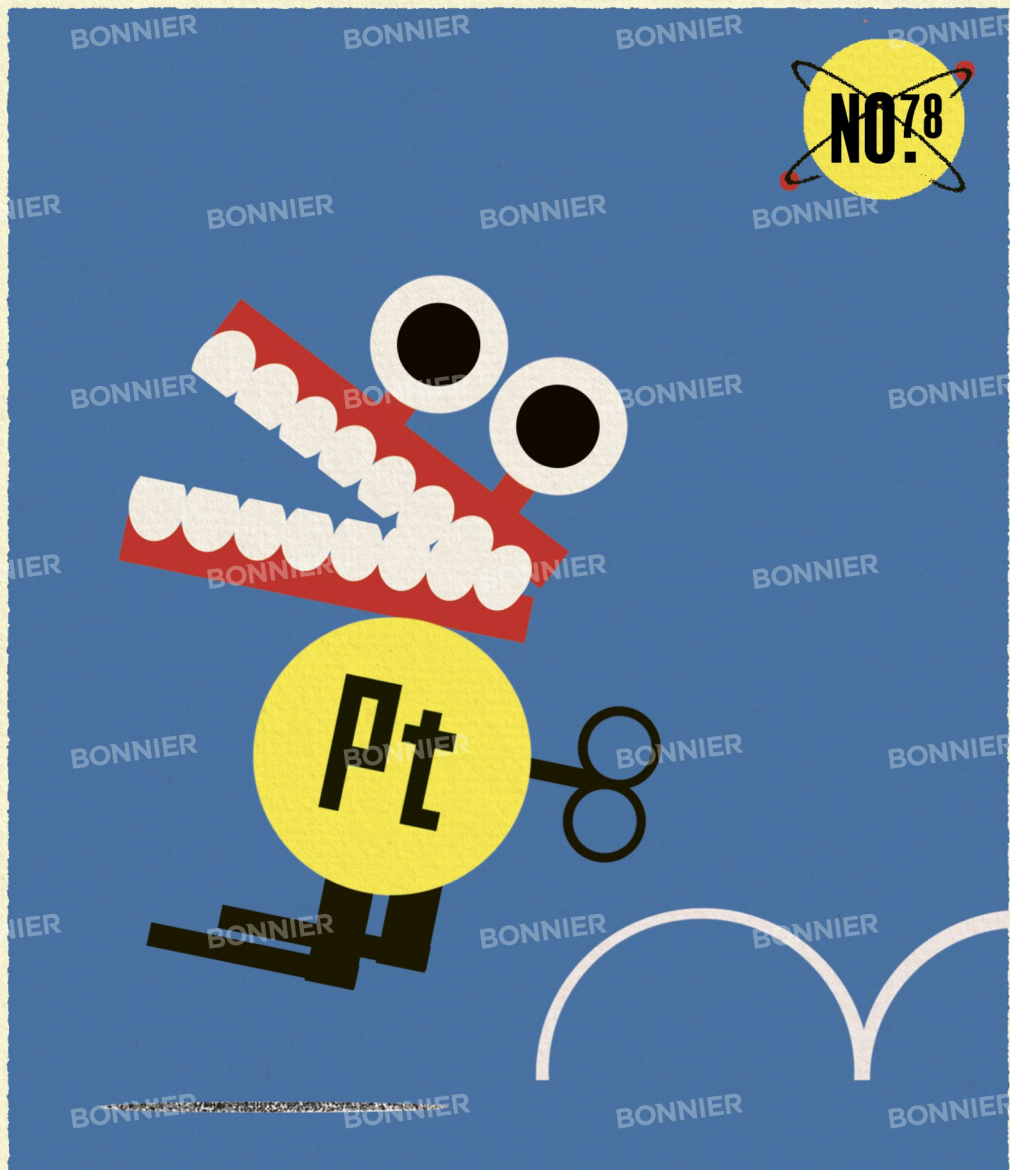
Named after Pallas, one of the largest asteroids in the asteroid belt between the orbits of Mars and Jupiter.

THE EXTRAORDINARY ELEMENTS

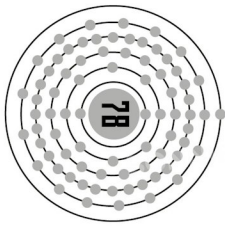
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PLATINUM



THE TRANSITION METALS

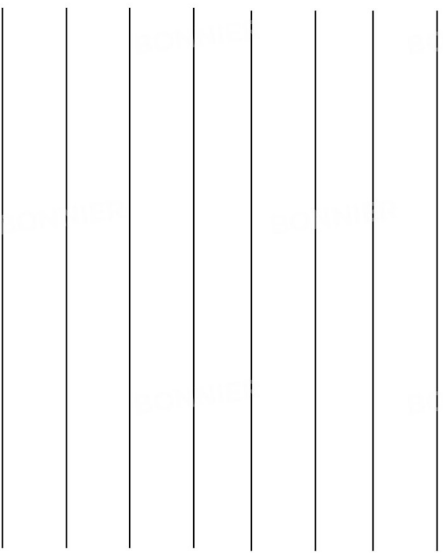


PLATINUM

This expensive metal is used in jewellery and dental fillings.

THE EXTRAORDINARY ELEMENTS

COLIN STUART AND XIMO ABADIA

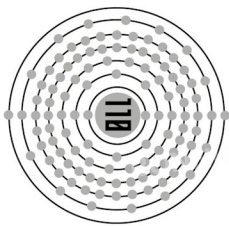


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DARMSTADTIUM



THE SUPER-HEAVIES



THE EXTRAORDINARY ELEMENTS

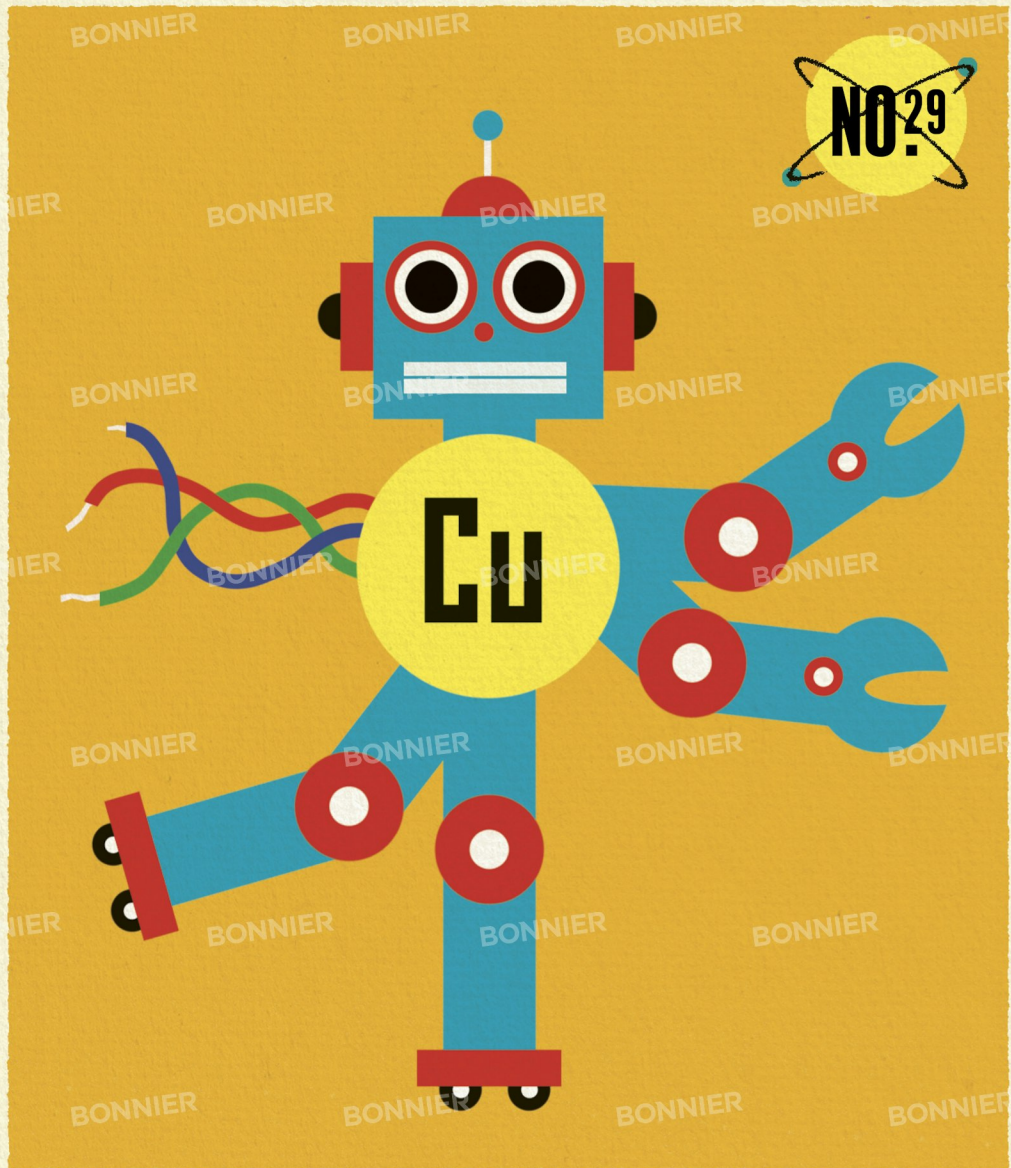
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DARMSTADTIUM

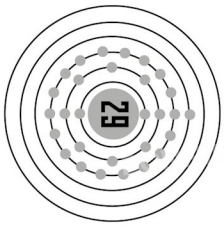
Named after Darmstadt, Germany, where the element was first produced.

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COPPER



THE TRANSITION METALS



THE EXTRAORDINARY ELEMENTS

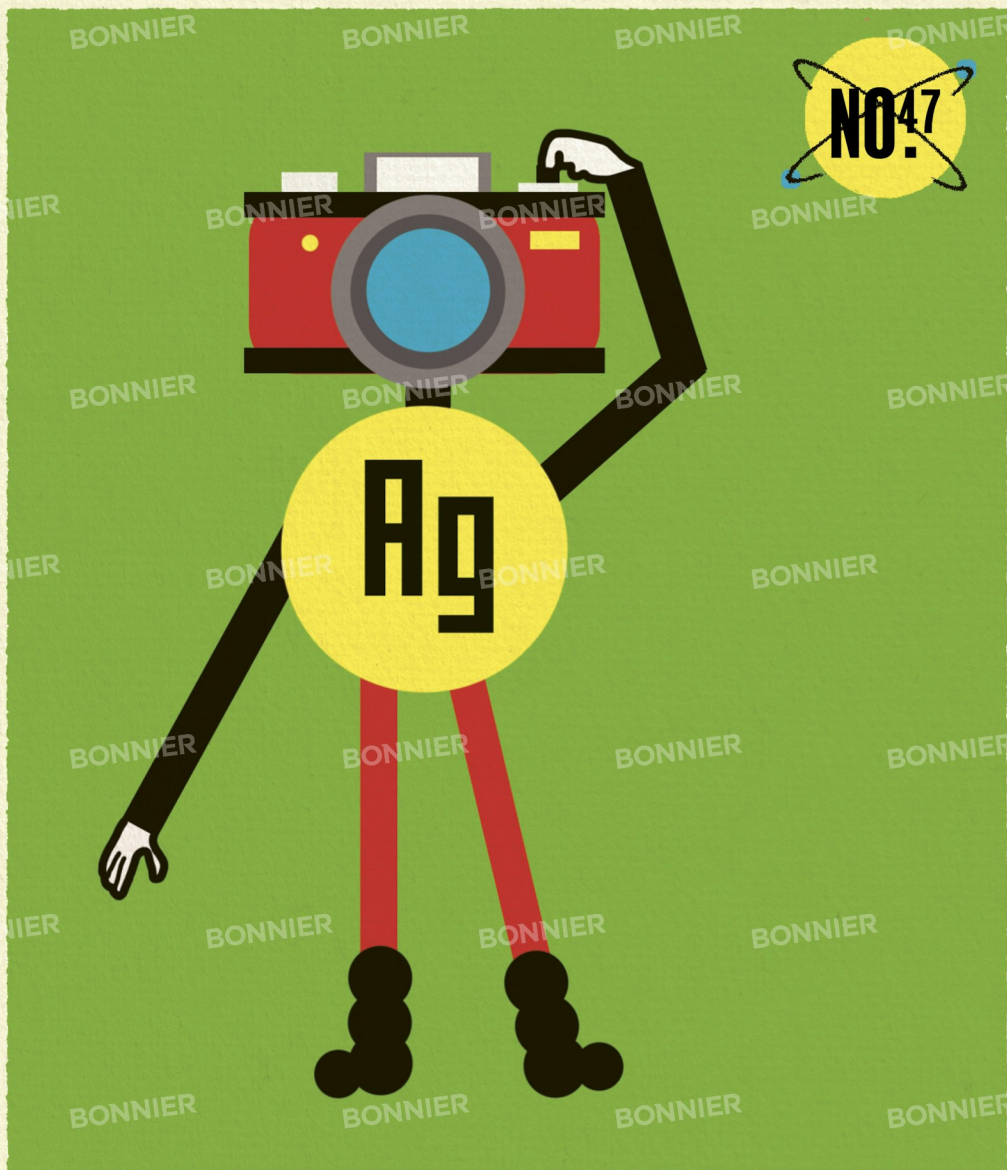
COLIN STUART AND XIMO ABADIA

COPPER

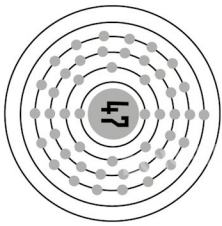
A good conductor of electricity, copper is often found in wires.

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SILVER



THE TRANSITION METALS



THE EXTRAORDINARY ELEMENTS

COLIN STUART AND XIMO ABADIA

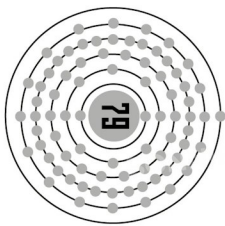
SILVER One of the first precious metals discovered by humans, silver is also the best metallic electrical conductor. It is widely used in cameras.

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GOLD



***THE* TRANSITION METALS**



THE EXTRAORDINARY ELEMENTS

COLIN STUART AND XIMO ABADIA

GOLD

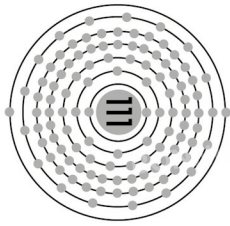
One of the most desirable metals on Earth, gold is frequently associated with royalty and wealth.

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ROENTGENIUM

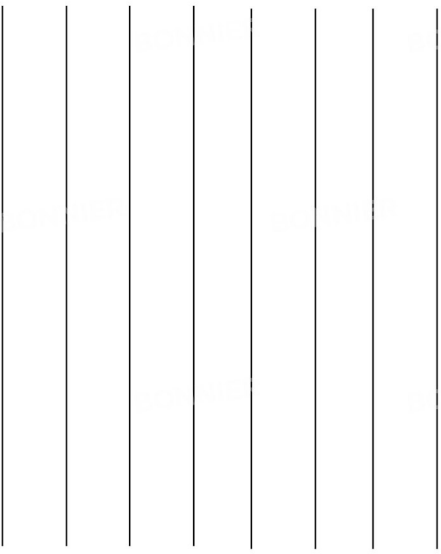


THE SUPER-HEAVIES



THE EXTRAORDINARY ELEMENTS

COLIN STUART AND XIMO ABADIA



ROENTGENIUM

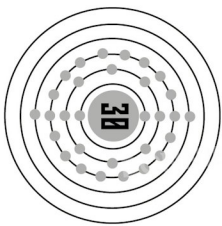
Named after German physicist Wilhelm Conrad Röntgen.

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ZINC



THE TRANSITION METALS



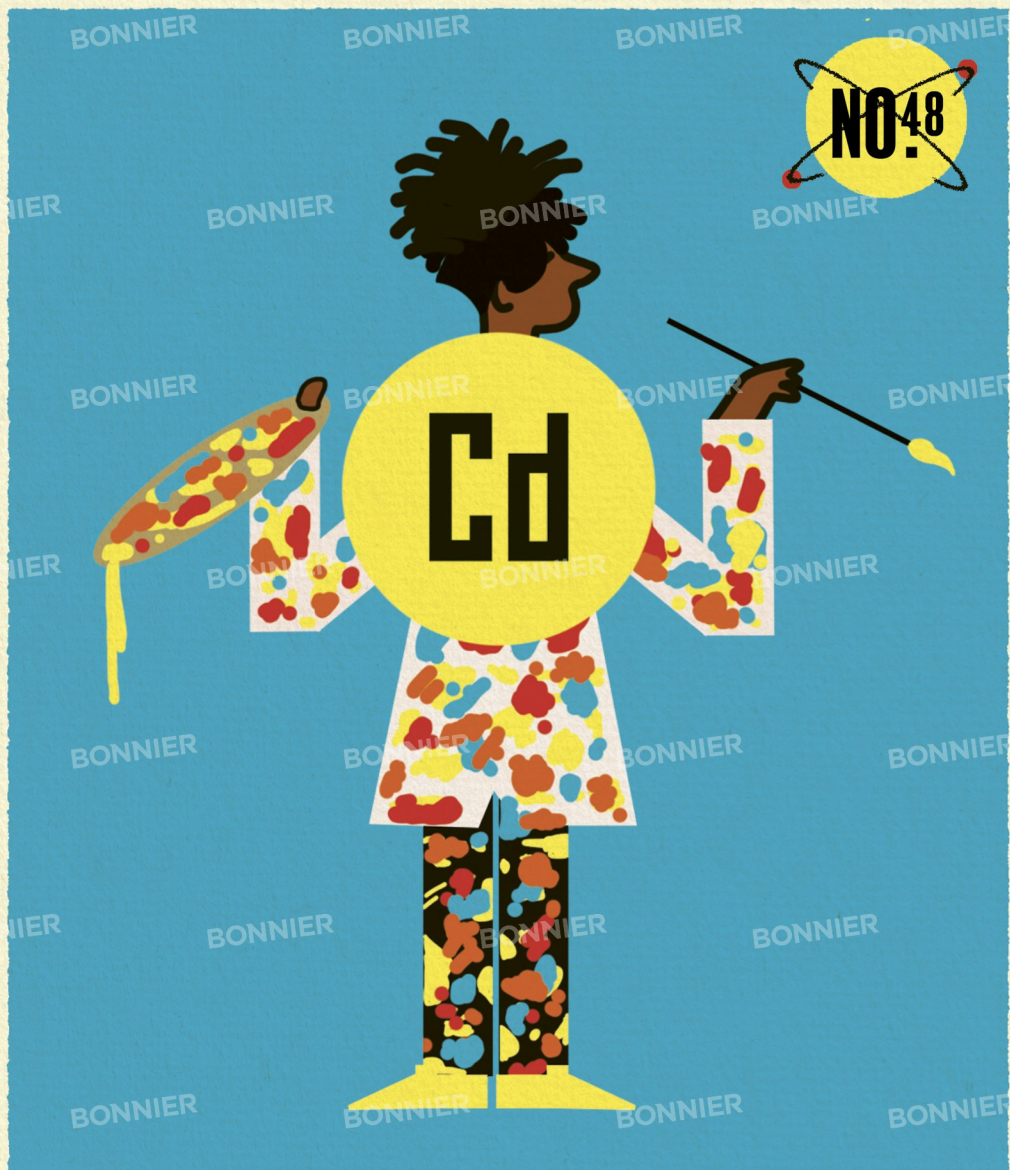
THE EXTRAORDINARY ELEMENTS

COLIN STUART AND XIMO ABADIA

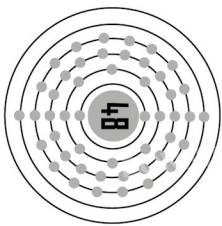
ZINC When combined with copper, this forms brass.

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CADMIUM



THE TRANSITION METALS



THE EXTRAORDINARY ELEMENTS

COLIN STUART AND XIMO ABADIA

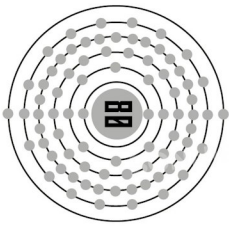
CADMIUM This element gives its name to cadmium pigments used in paint. It is also the name of a famous painting by Jean-Michel Basquiat.

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MERCURY



THE TRANSITION METALS



THE EXTRAORDINARY ELEMENTS

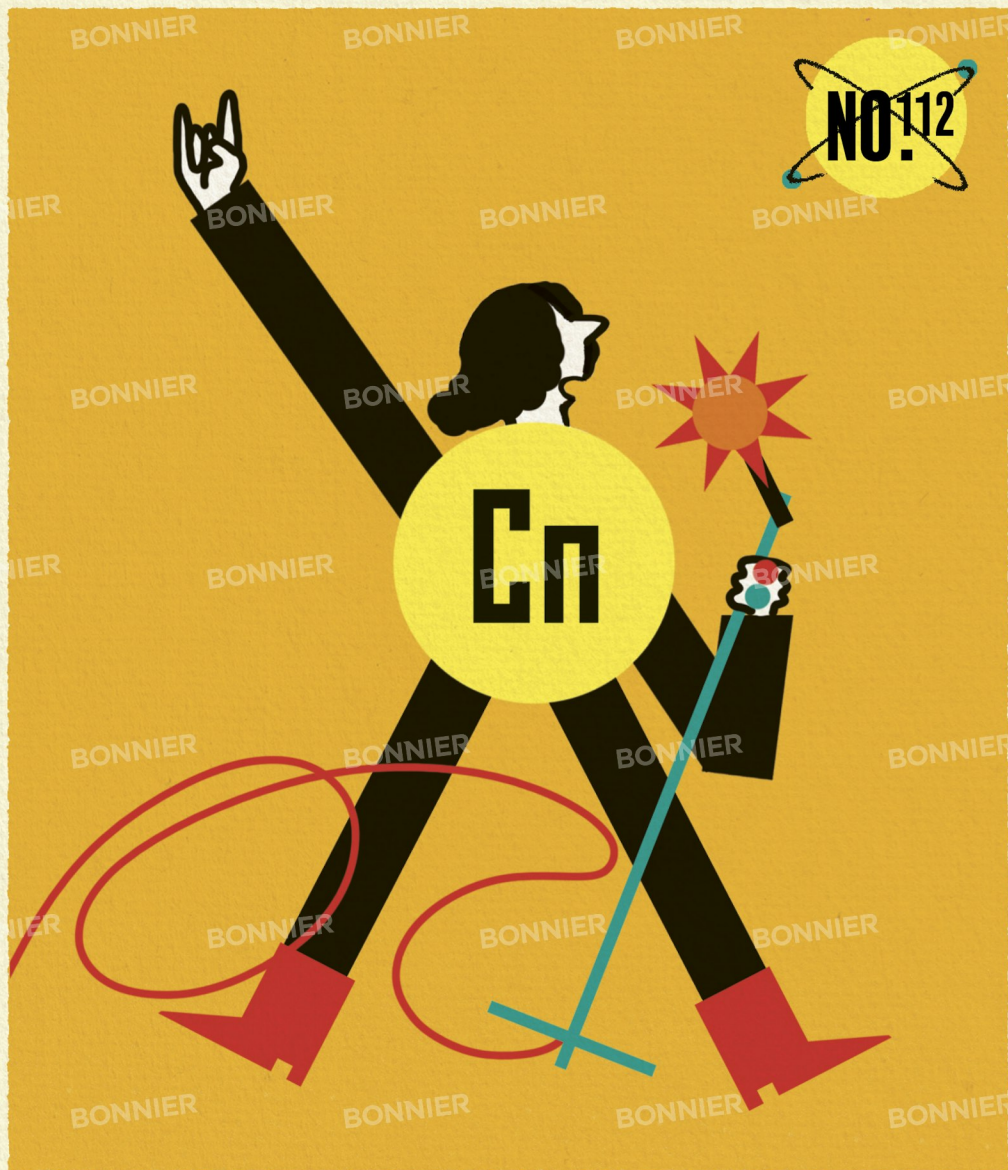
COLIN STUART AND XIMO ABADIA

MERCURY

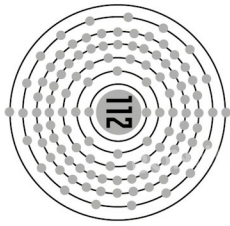
Liquid at room temperature, mercury is suited for use in thermometers. It is shown here as Freddie Mercury, lead singer of the band Queen.

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COPERNICIUM



THE **TRANSITION METALS**



THE EXTRAORDINARY ELEMENTS

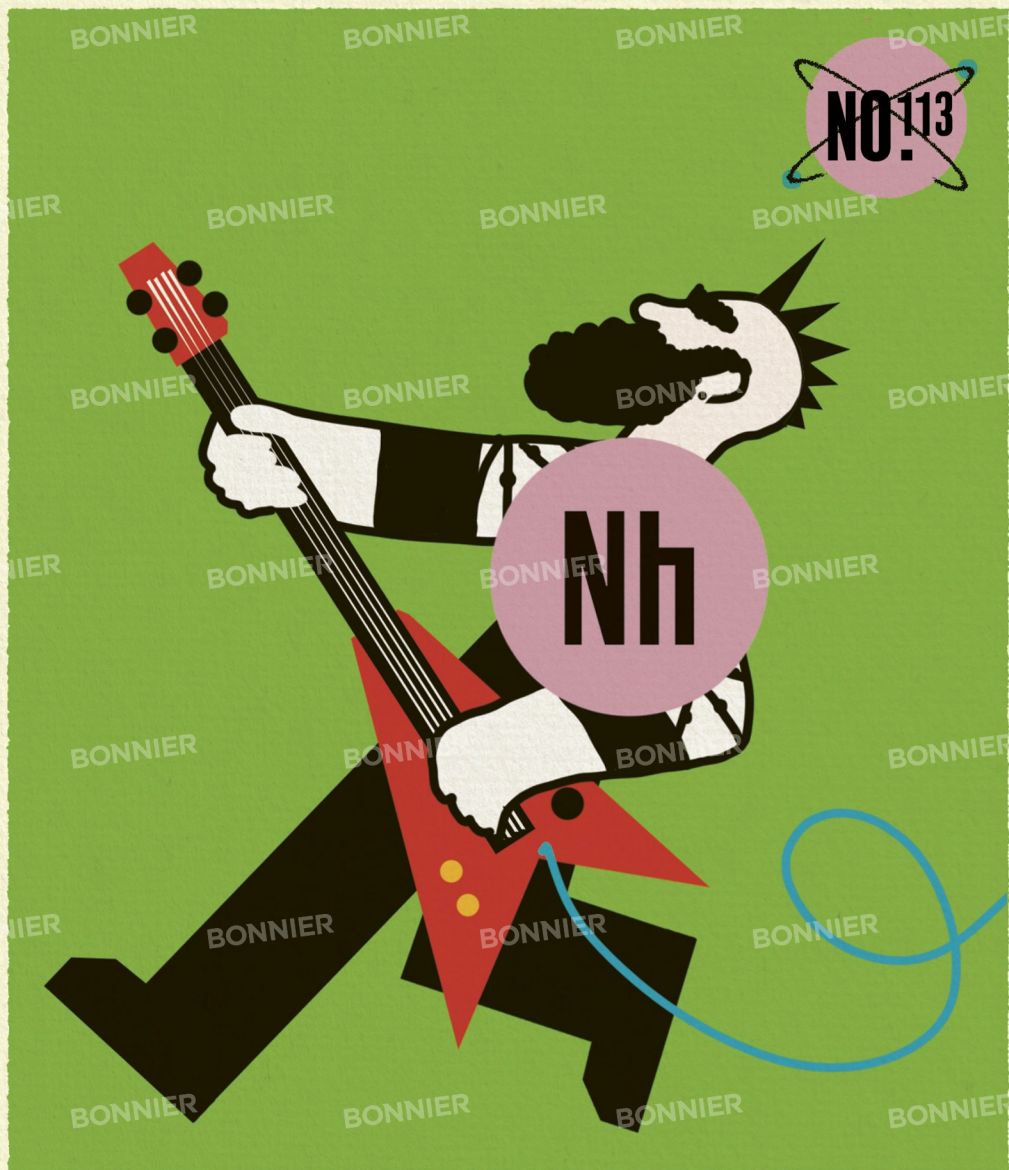
COLIN STUART AND XIMO ABADIA

COPERNICIUM

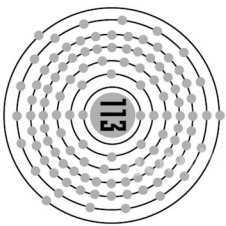
Named after the Renaissance scientist Nicolaus Copernicus.

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NIHONIUM



THE SUPER-HEAVIES



THE EXTRAORDINARY ELEMENTS

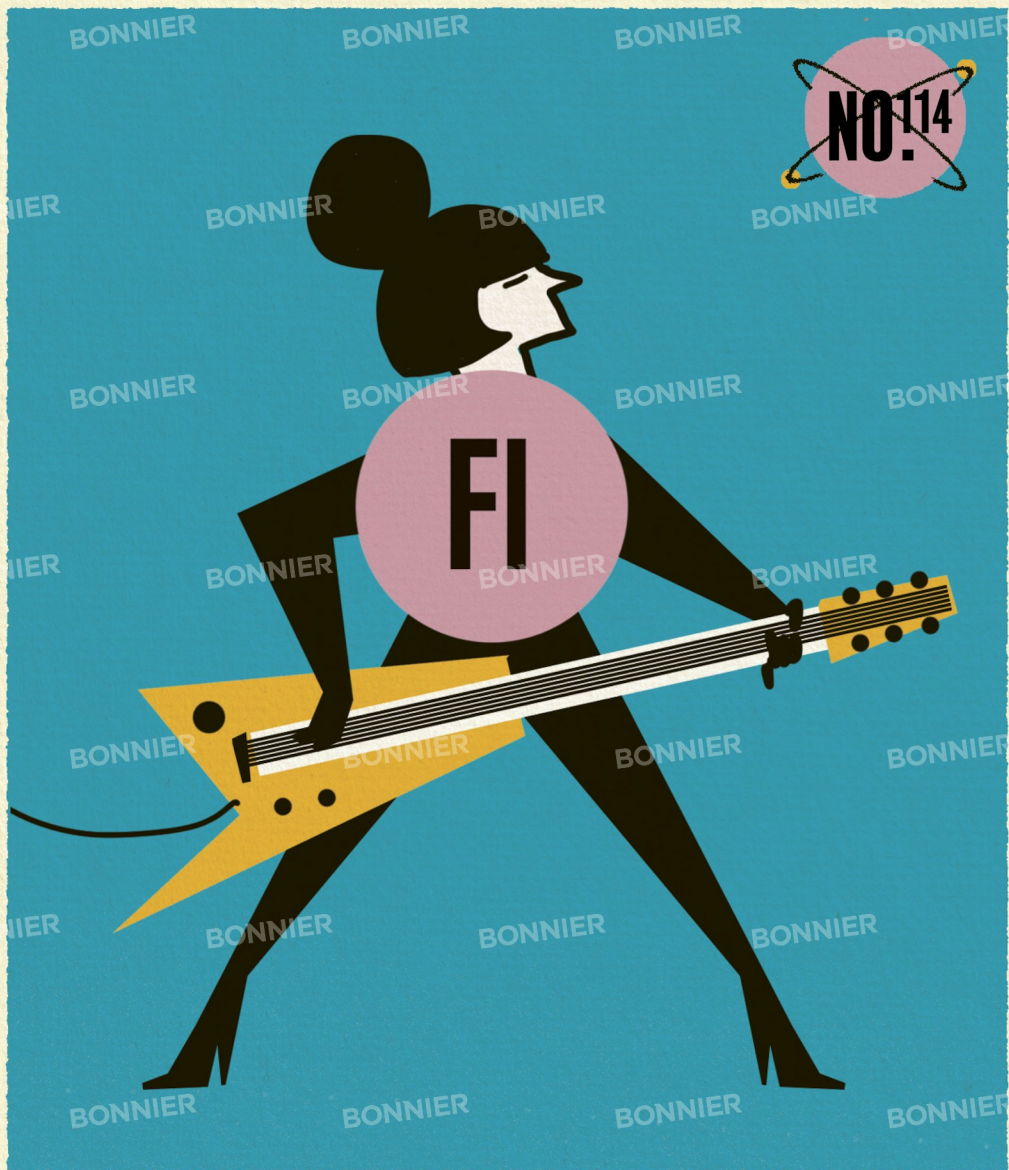
COLIN STUART AND XIMO ABADIA

NIHONIUM

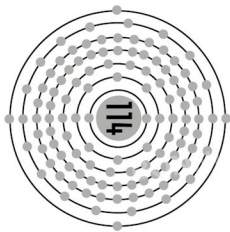
The name refers to the Japanese name for Japan, 'nihon', giving this element its symbol.

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FLEROVIUM

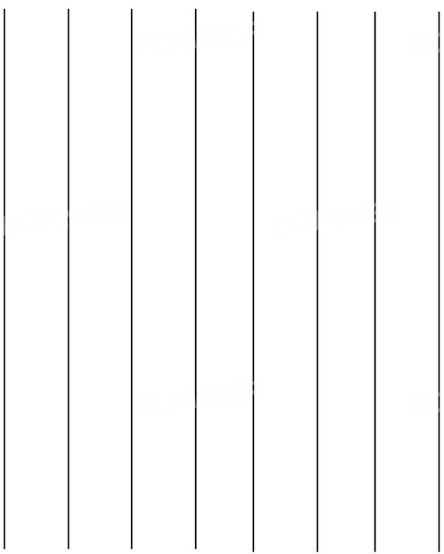


THE SUPER-HEAVIES



THE EXTRAORDINARY ELEMENTS

COLIN STUART AND XIMO ABADIA

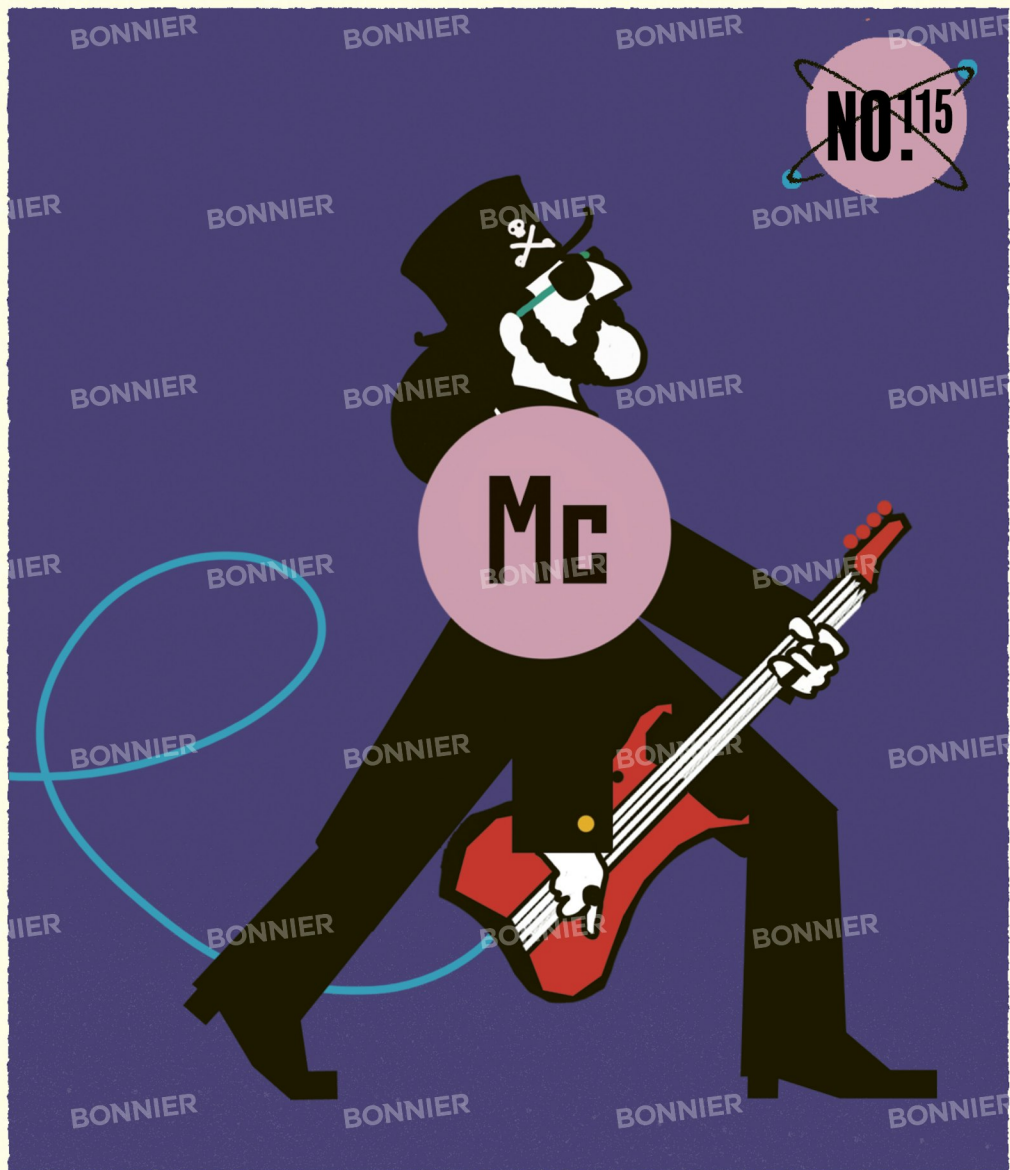


FLEROVIUM

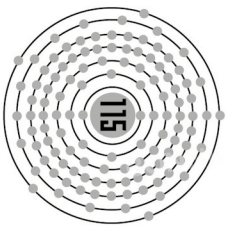
Named after Georgy Flerov who founded the Joint Institute for Nuclear Research.

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MOSCOVIUM



THE SUPER-HEAVIES



THE EXTRAORDINARY ELEMENTS

COLIN STUART AND XIMO ABADIA

MOSCOVIUM

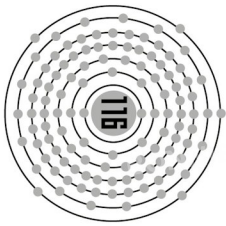
The name refers to Moscow, where the Joint Institute of Nuclear Research is based.

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LIVERMORIUM

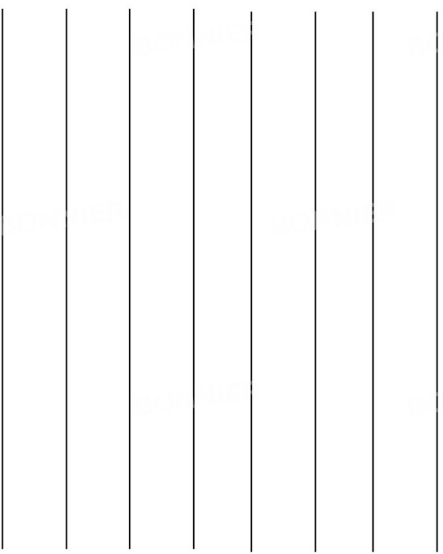


THE SUPER-HEAVIES



THE EXTRAORDINARY ELEMENTS

COLIN STUART AND XIMO ABADIA



LIVERMORIUM

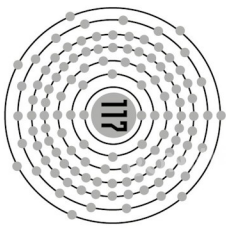
This super heavy element is named after the Lawrence Livermore National Laboratory in California, USA which coincidentally is where Motörhead frontman Lemmy died.

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TENNESSINE



THE SUPER-HEAVIES



TENNESINE

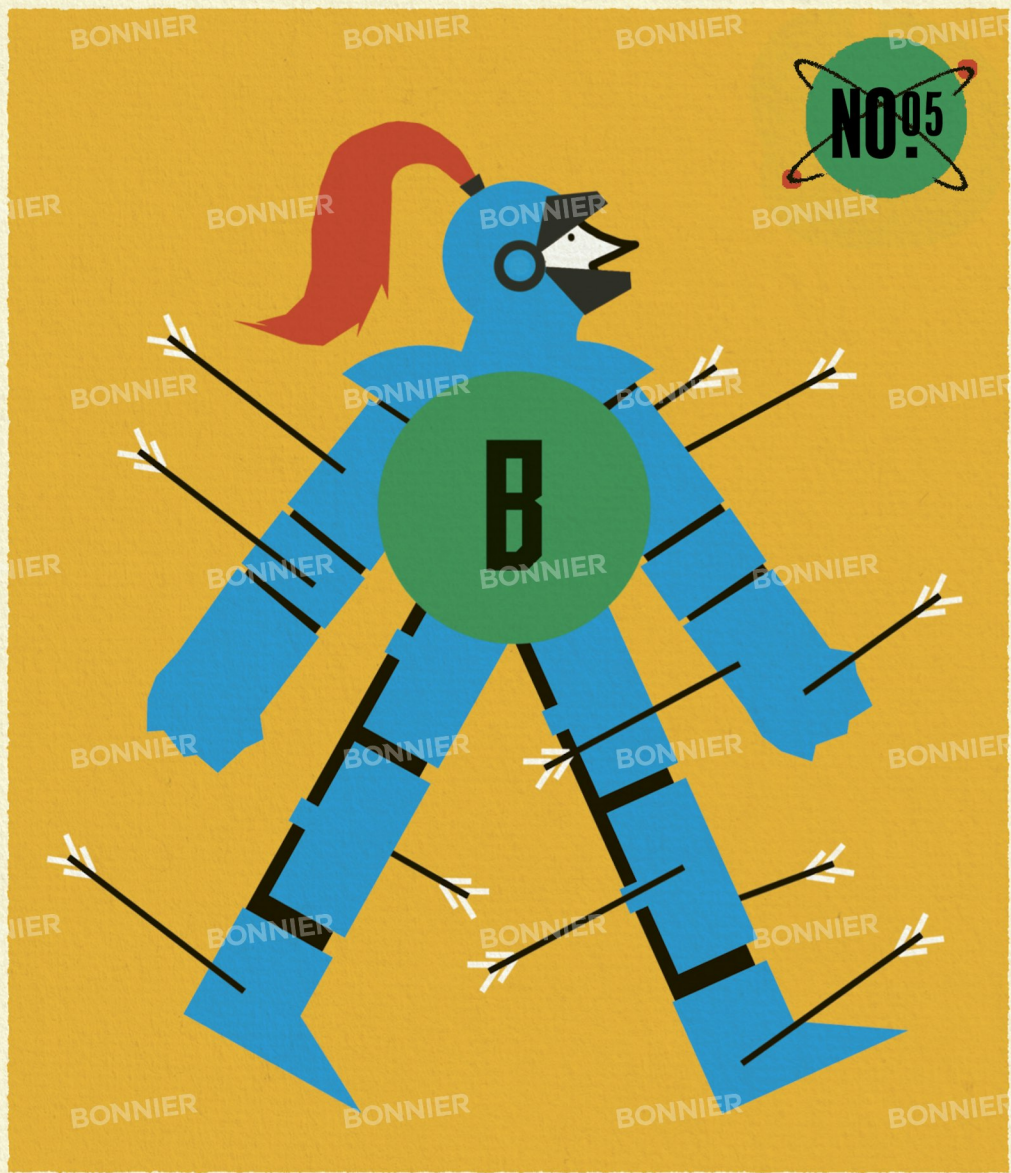
The name refers to the US state of Tennessee.

THE EXTRAORDINARY ELEMENTS

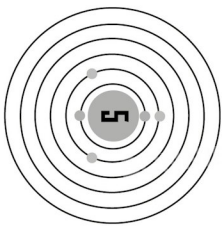
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BORON



THE METALLOIDS

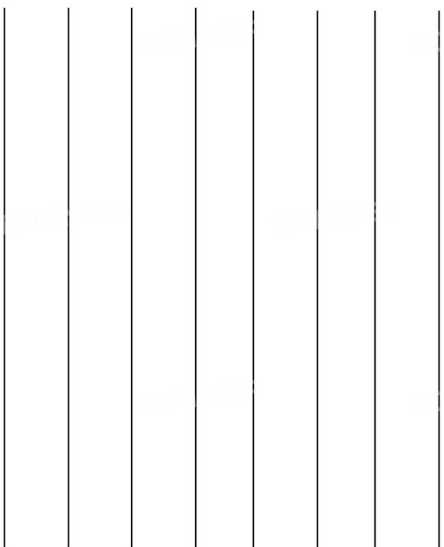


BORON

This element is used in armour plating and bulletproof vests.

THE EXTRAORDINARY ELEMENTS

COLIN STUART AND XIMO ABADIA

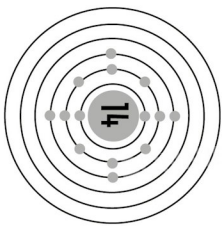


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SILICON



THE METALLOIDS

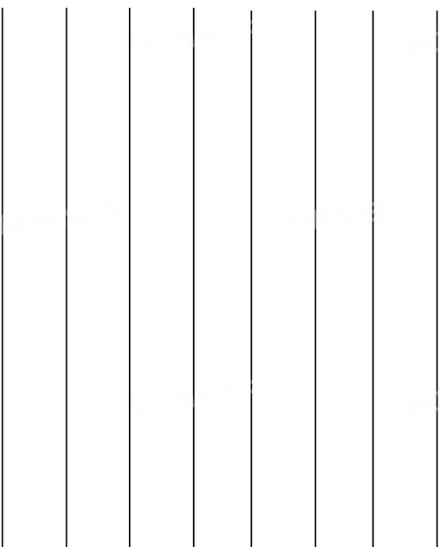


SILICON

This is a key material used in computer chips.

THE EXTRAORDINARY ELEMENTS

COLIN STUART AND XIMO ABADIA

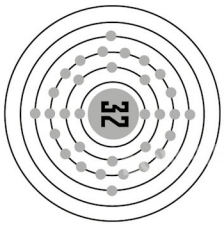


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GERMANIUM



THE **METALLOIDS**



THE EXTRAORDINARY ELEMENTS

COLIN STUART AND XIMO ABADIA

GERMANIUM

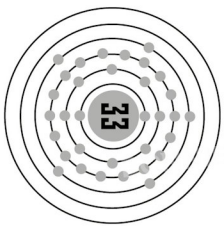
This element is named after Germany. When combined with oxygen, it can be used in optical devices such as microscope lenses.

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ARSENIC



THE METALLOIDS



THE EXTRAORDINARY ELEMENTS

COLIN STUART AND XIMO ABADÍA

ARSENIC

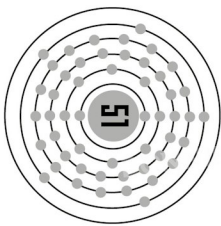
Infamously toxic and associated with many famous deaths, *Poison* is the hit single by American musician Alice Cooper.

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ANTIMONY



THE METALLOIDS



THE EXTRAORDINARY ELEMENTS

COLIN STUART AND XIMO ABADIA

ANTIMONY

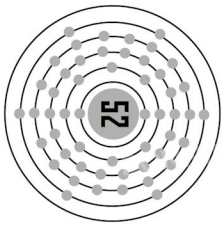
This element was once used as black Kohl eyeliner in ancient Egypt.

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TELLURIUM



THE **METALLOIDS**



THE EXTRAORDINARY ELEMENTS

COLIN STUART AND XIMO ABADIA

TELLURIUM

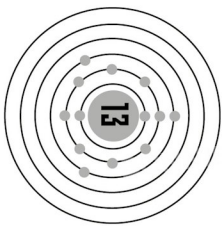
Named after the Latin word 'tellus' meaning 'Earth'. Ironically, it is one of the rarest elements on our planet.

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ALUMINIUM



THE POST-TRANSITION
METALS



THE EXTRAORDINARY ELEMENTS

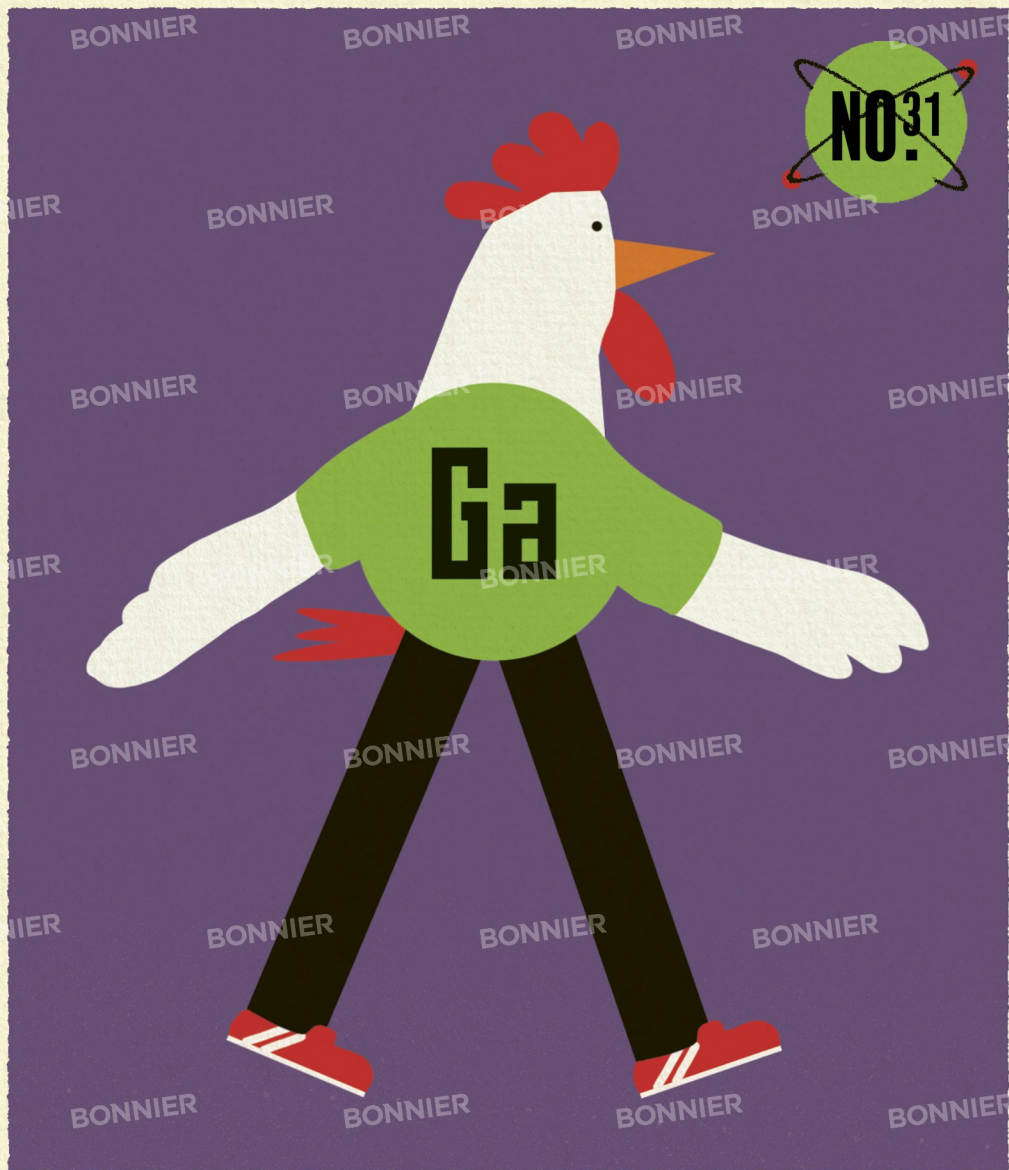
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ALUMINIUM

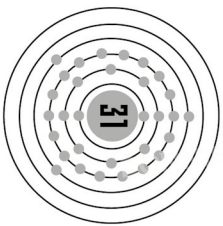
This lightweight element is found in everything from cars to cans and kitchen foil.

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GALLIUM



THE POST-TRANSITION
METALS



THE EXTRAORDINARY ELEMENTS

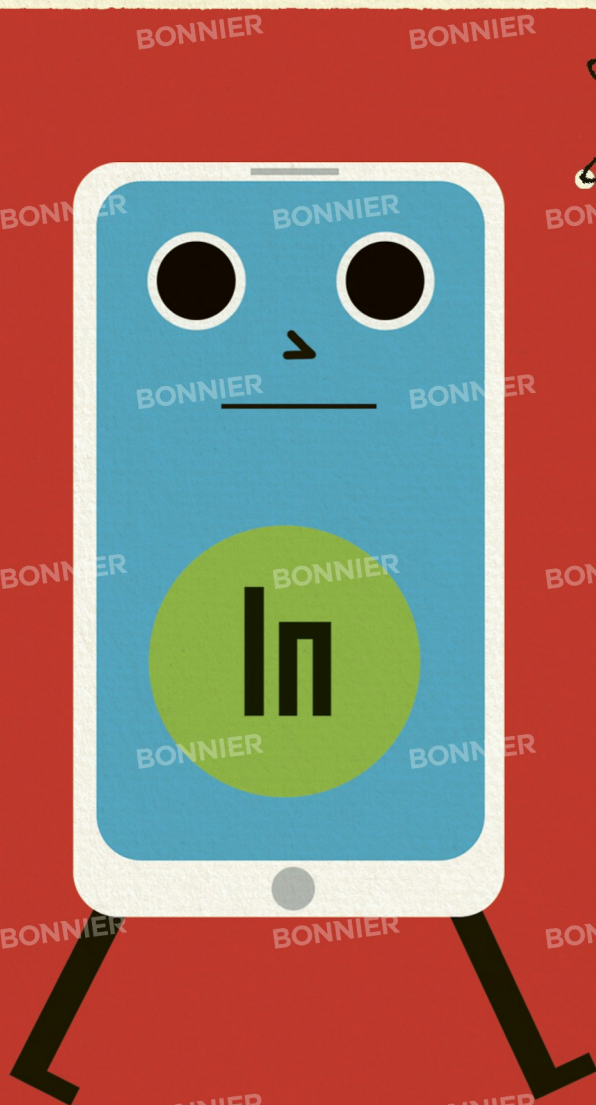
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GALLIUM

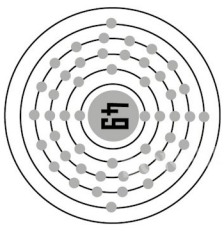
Named after 'Gallia', the Latin name for France. The element may also be named after its French discoverer, Paul Emile Lecoq – 'lecoq' means 'rooster' in French.

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INDIUM



THE POST-TRANSITION
METALS



THE EXTRAORDINARY ELEMENTS

COLIN STUART AND XIMO ABADIA

INDIUM

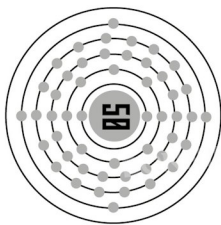
This element is important for touchscreen technology and LCDs.

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TIN



THE POST-TRANSITION **METALS**



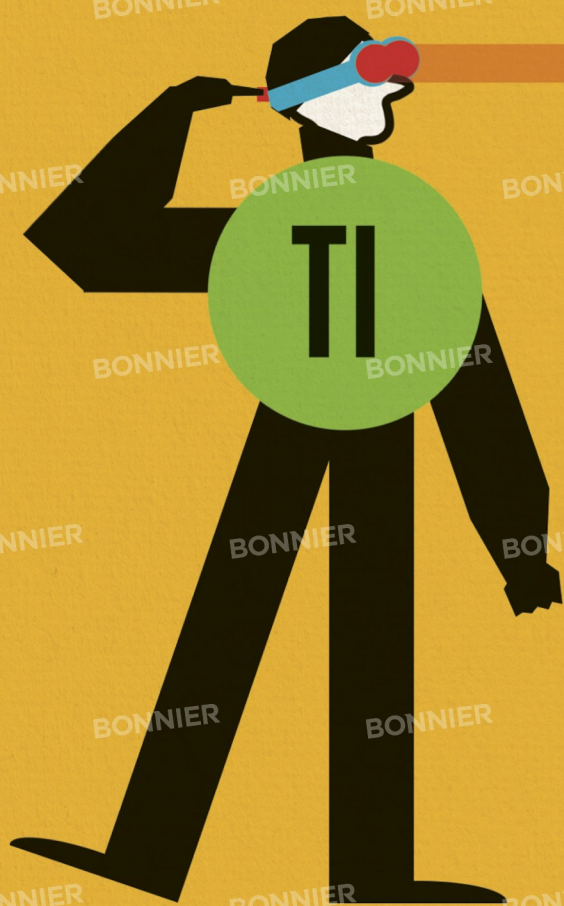
TIN In folklore, tin whistles are associated with witches.

THE EXTRAORDINARY ELEMENTS

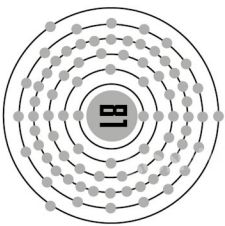
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THALLIUM



THE POST-TRANSITION
METALS



THALLIUM

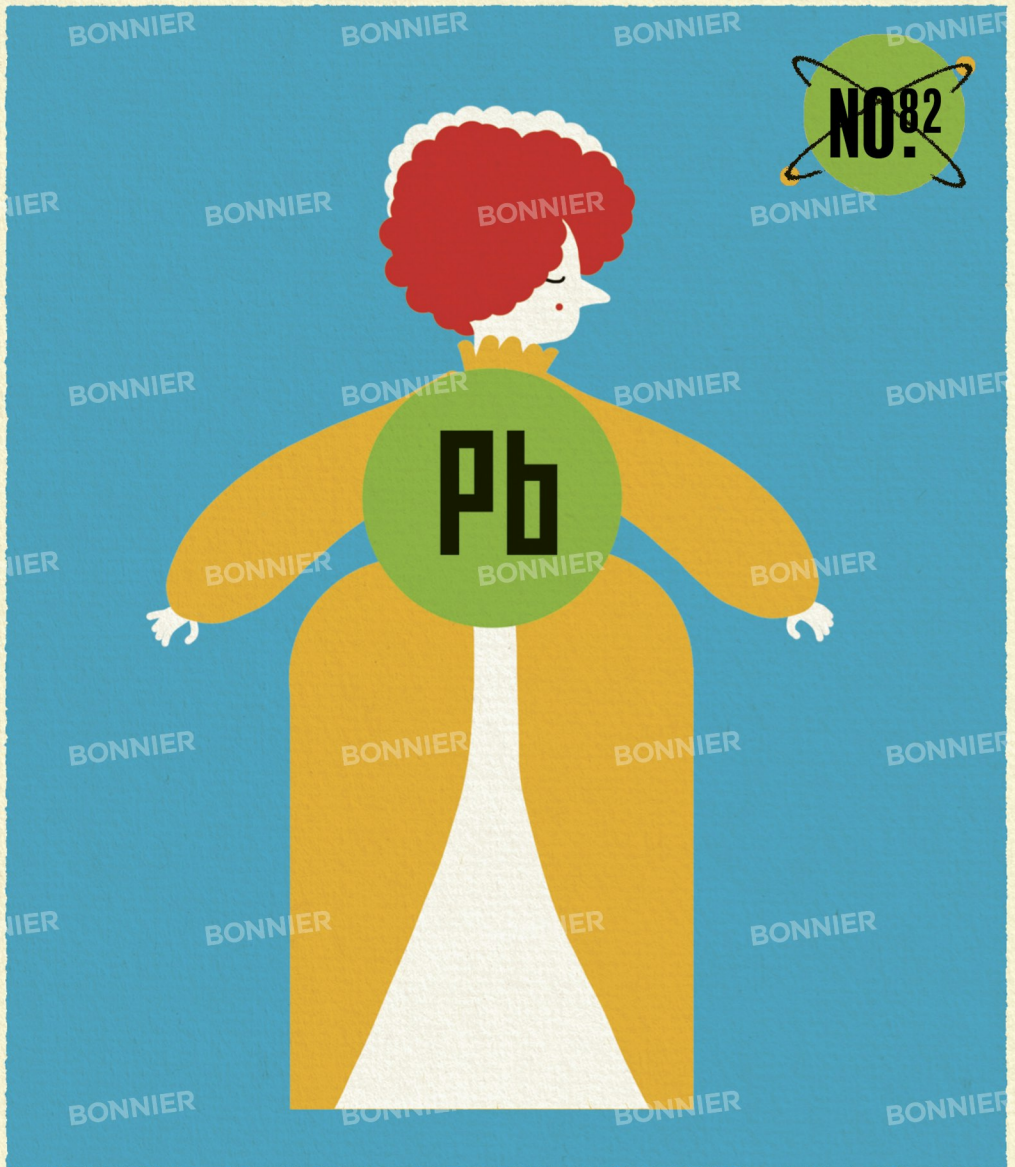
This element is often used in infrared optics, such as night vision goggles.

THE EXTRAORDINARY ELEMENTS

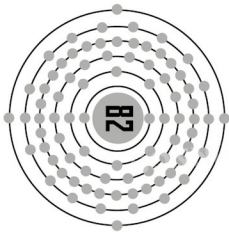
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LEAD



THE POST-TRANSITION METALS



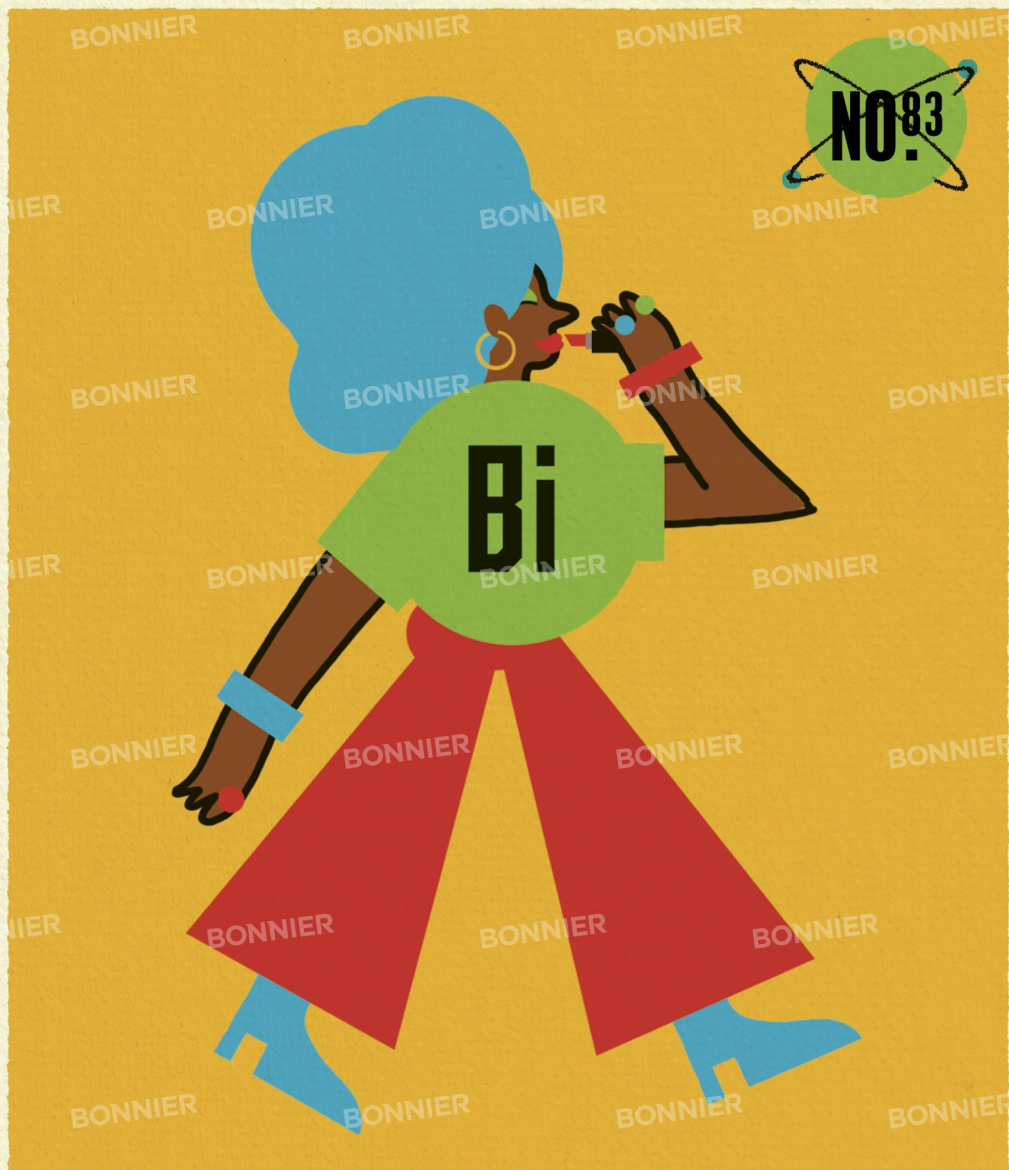
THE EXTRAORDINARY ELEMENTS

COLIN STUART AND XIMO ABADIA

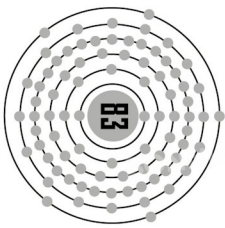
LEAD A powdered form of this toxic element was famously used as makeup by Queen Elizabeth I. It is widely believed to have contributed to her death.

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BISMUTH

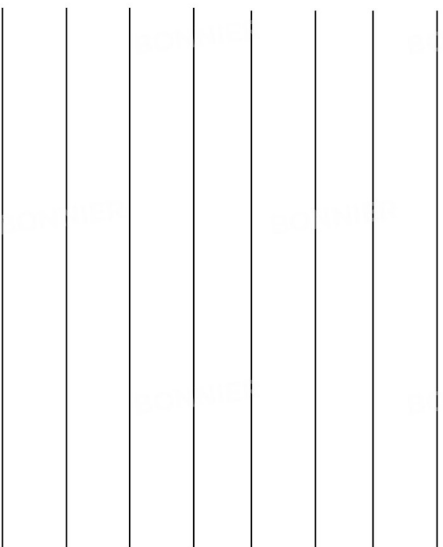


THE POST-TRANSITION
METALS



THE EXTRAORDINARY ELEMENTS

COLIN STUART AND XIMO ABADIA

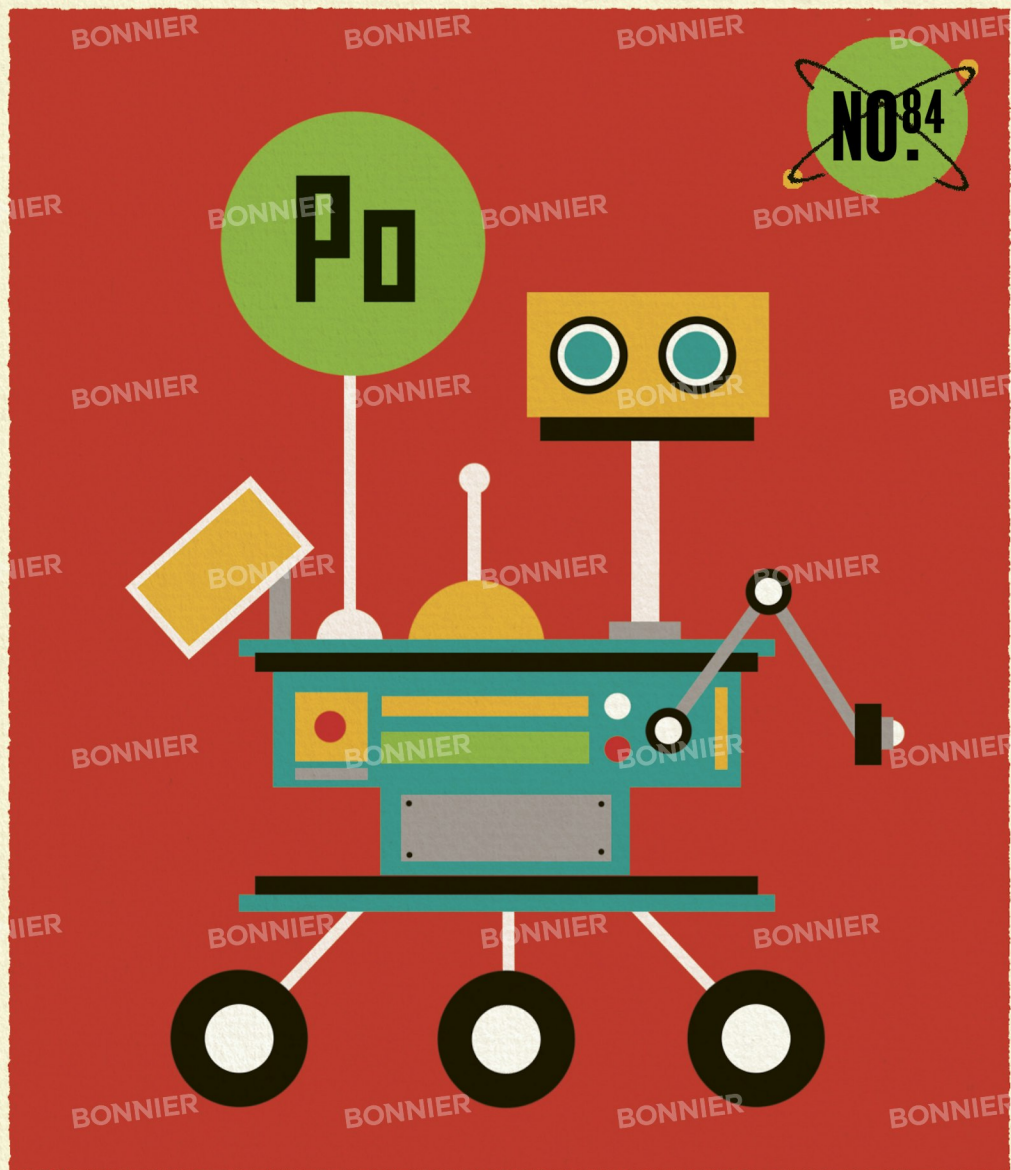


BISMUTH

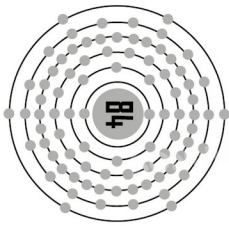
This pink-tinged element produces a shimmering, pearl-like powder often found in cosmetics.

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POLONIUM



THE POST-TRANSITION
METALS



THE EXTRAORDINARY ELEMENTS

COLIN STUART AND XIMO ABADIA

POLONIUM

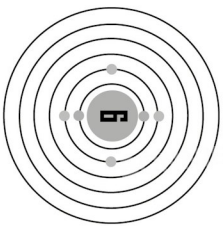
Highly unstable, radioactive and toxic, polonium is used to heat lunar and Mars rovers in space.

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CARBON



THE REACTIVE NON-METALS



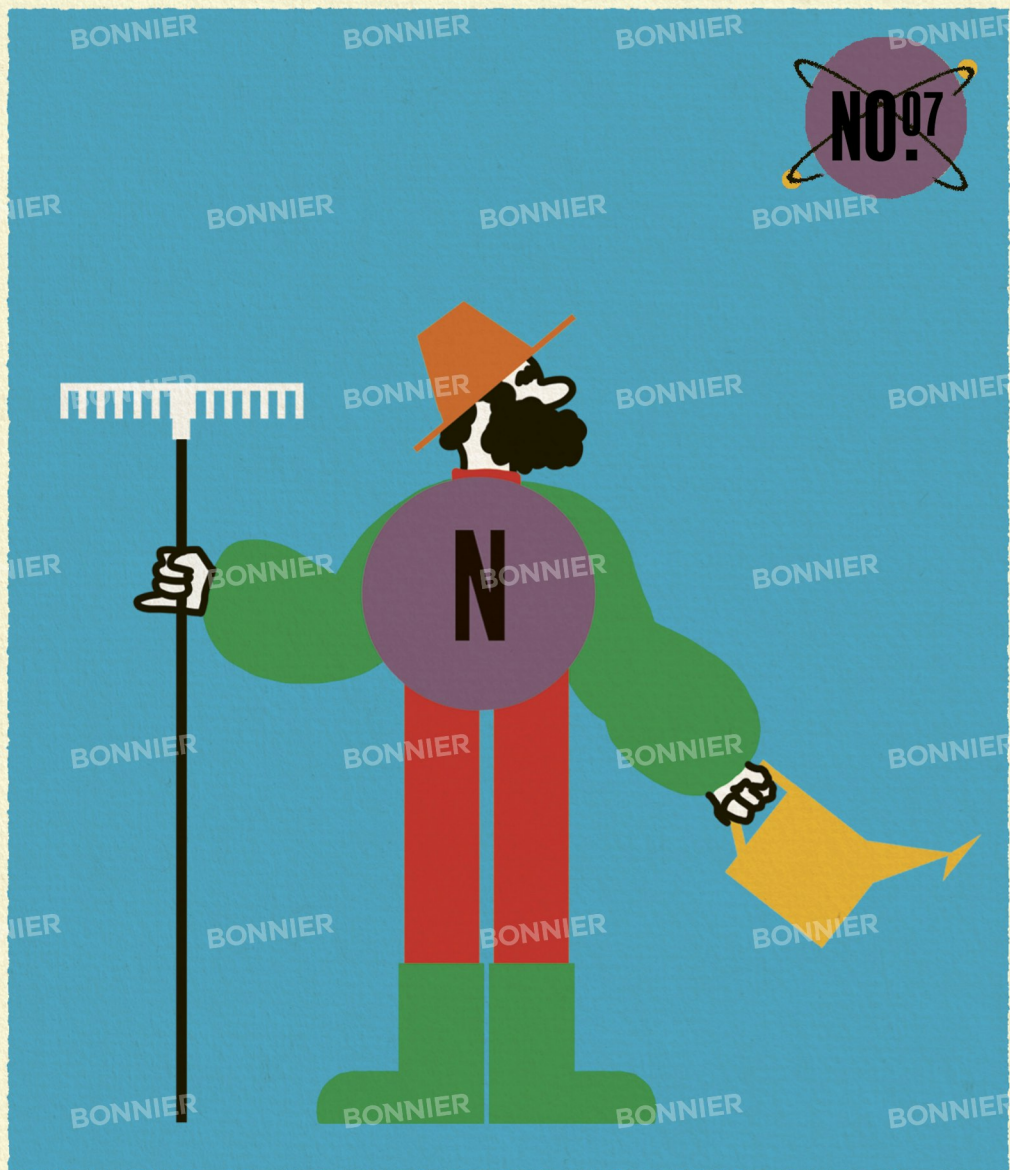
THE EXTRAORDINARY ELEMENTS

COLIN STUART AND XIMO ABADIA

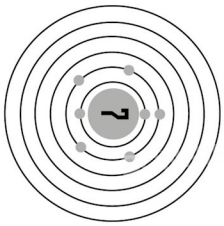
CARBON This element is unique in its ability to form complex chemicals by bonding in a variety of ways. One arrangement creates pencil leads.

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NITROGEN



THE REACTIVE NON-METALS



THE EXTRAORDINARY ELEMENTS

COLIN STUART AND XIMO ABADIA

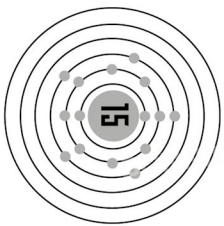
NITROGEN This element is a key ingredient to life, and is also crucial to fertilisers used by farmers and gardeners to help grow plants.

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PHOSPHORUS



THE REACTIVE NON-METALS



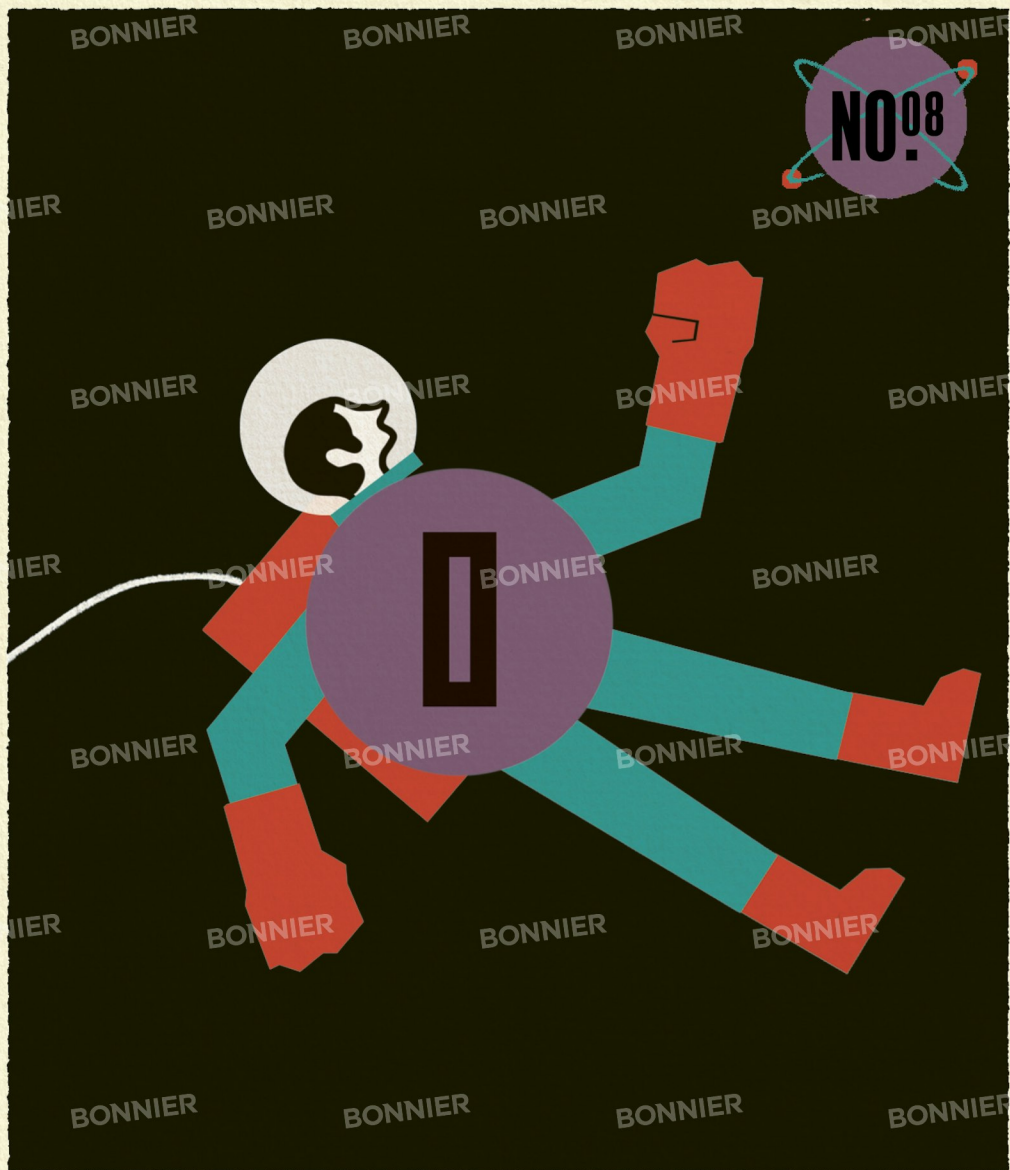
THE EXTRAORDINARY ELEMENTS

COLIN STUART AND XIMO ABADIA

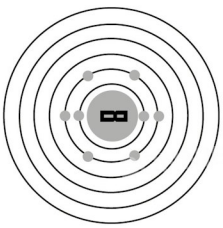
PHOSPHORUS This element makes the flammable head of matches. The name comes from the Greek 'phosphoros' meaning 'bringer of light'.

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OXYGEN



THE REACTIVE NON-METALS



THE EXTRAORDINARY ELEMENTS

COLIN STUART AND XIMO ABADIA

OXYGEN Essential to all living things, just three minutes without oxygen is fatal to humans.

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SULFUR



THE REACTIVE NON-METALS



THE EXTRAORDINARY ELEMENTS

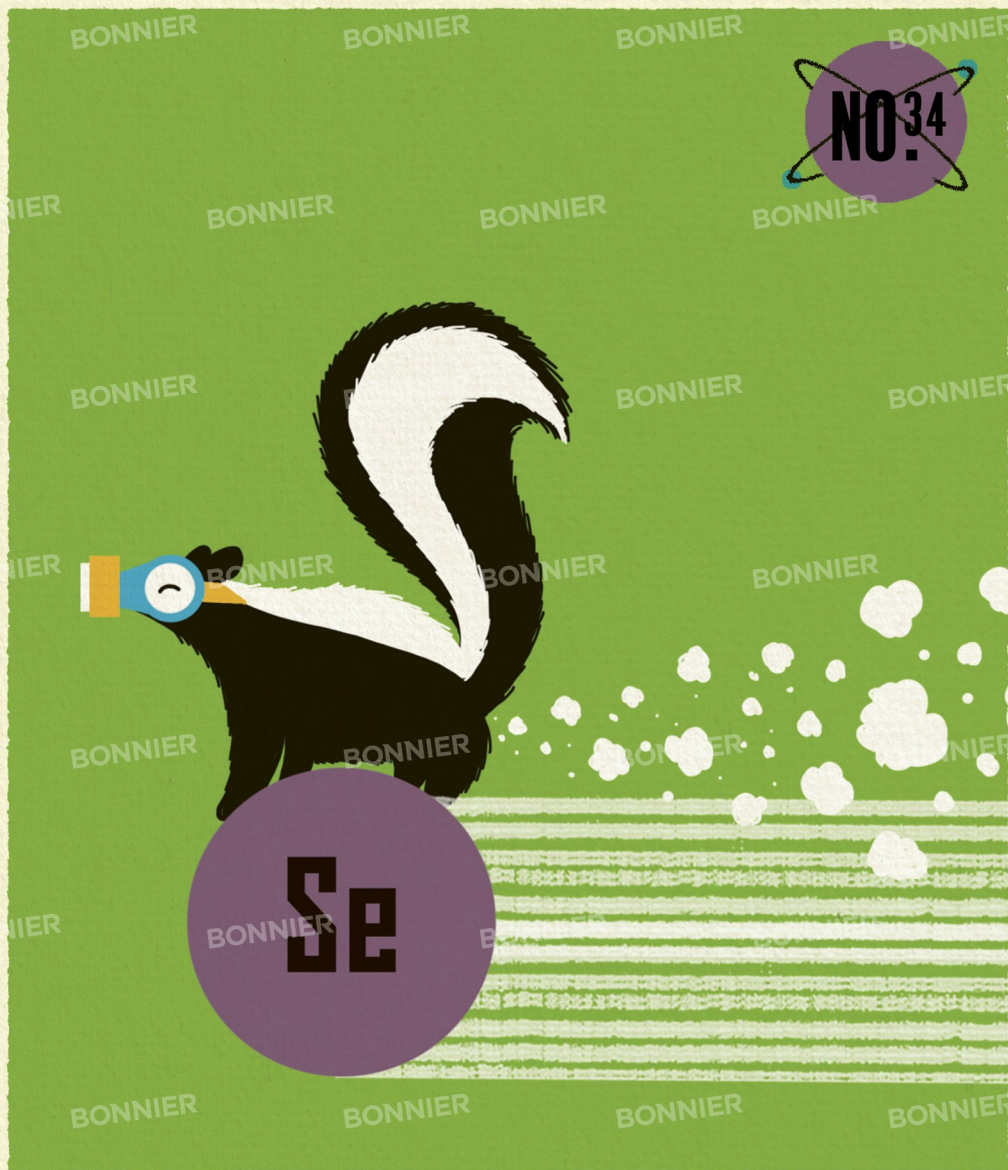
COLIN STUART AND XIMO ABADIA

SULFUR

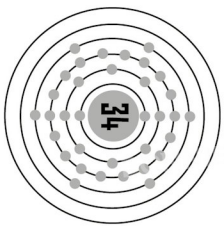
Known for most of human history, sulfur was one of the fundamental elements in alchemy.

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SELENIUM



THE REACTIVE NON-METALS



THE EXTRAORDINARY ELEMENTS

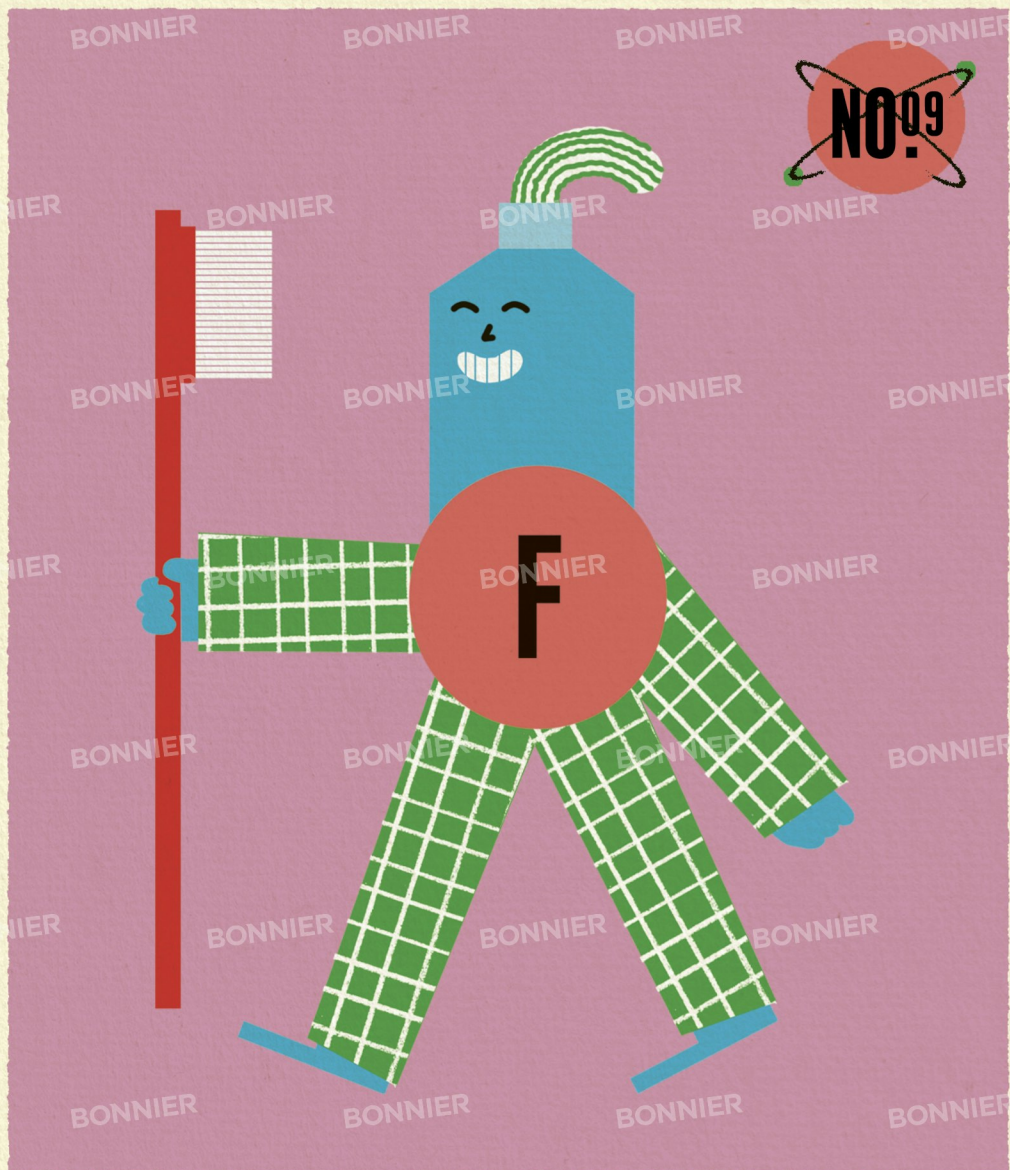
COLIN STUART AND XIMO ABADIA

SELENIUM

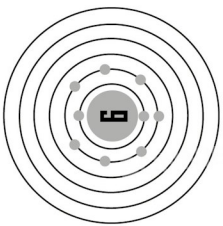
This is the ingredient that makes a skunk's spray so potent.

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FLUORINE



THE HALOGENS



THE EXTRAORDINARY ELEMENTS

COLIN STUART AND XIMO ABADIA

FLUORINE

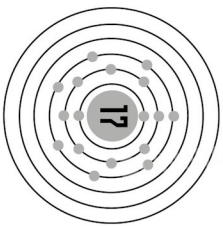
Despite its common usage in toothpaste, this element is the most chemically reactive.

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CHLORINE



THE HALOGENS



CHLORINE

This element is used to clean pools and water sources.

THE EXTRAORDINARY ELEMENTS

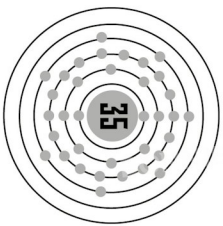
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BROMINE



THE HALOGENS



THE EXTRAORDINARY ELEMENTS

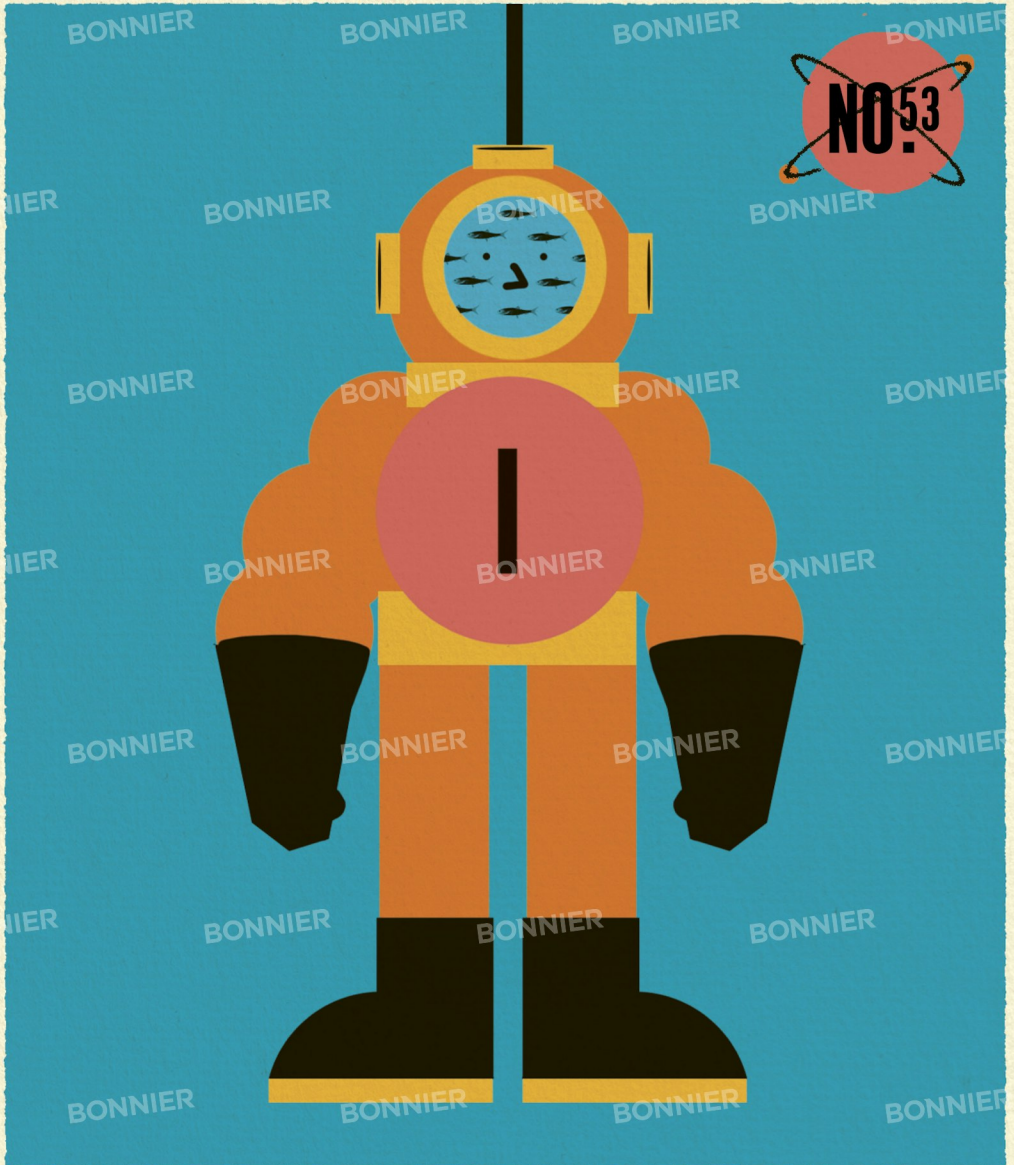
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BROMINE

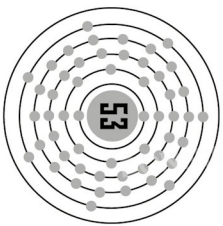
Bromine compounds are excellent flame retardants but isoge in fire extinguishers was banned in 1994 as bromine atoms destroy the ozone layer.

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IODINE



THE HALOGENS



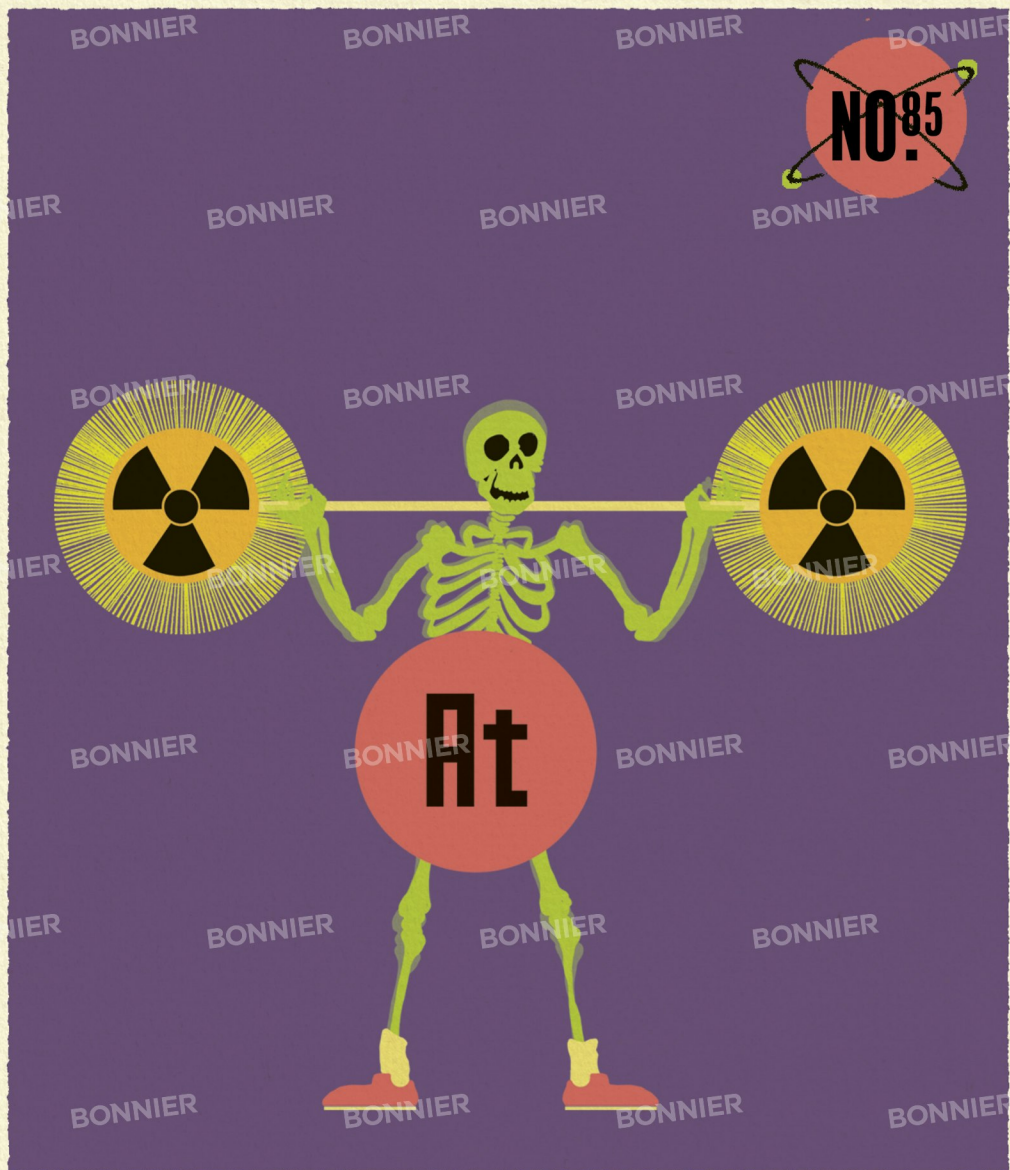
THE EXTRAORDINARY ELEMENTS

COLIN STUART AND XIMO ABADIA

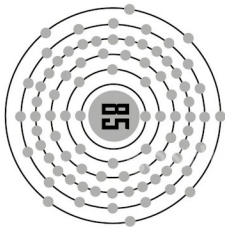
IODINE Discovered among dried seaweed, iodine is essential to human diets and can be found in fish, eggs and dairy products.

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ASTANTINE



THE HALOGENS



THE EXTRAORDINARY ELEMENTS

COLIN STUART AND XIMO ABADIA

ASTATTINE

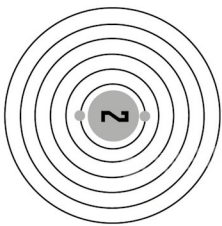
Dangerously radioactive, astatine is also the rarest natural element.

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HELIUM



THE NOBLE GASES

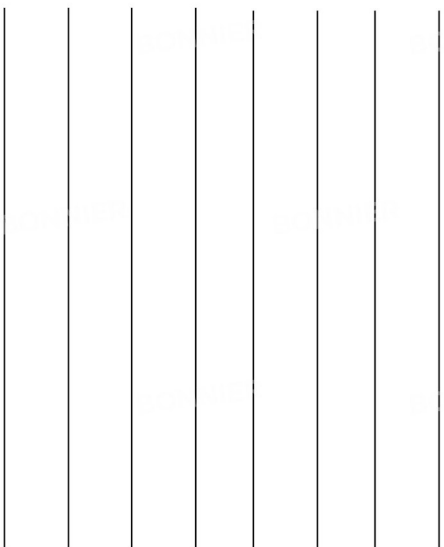


HELIUM

Lighter than air, this element makes zeppelins float.

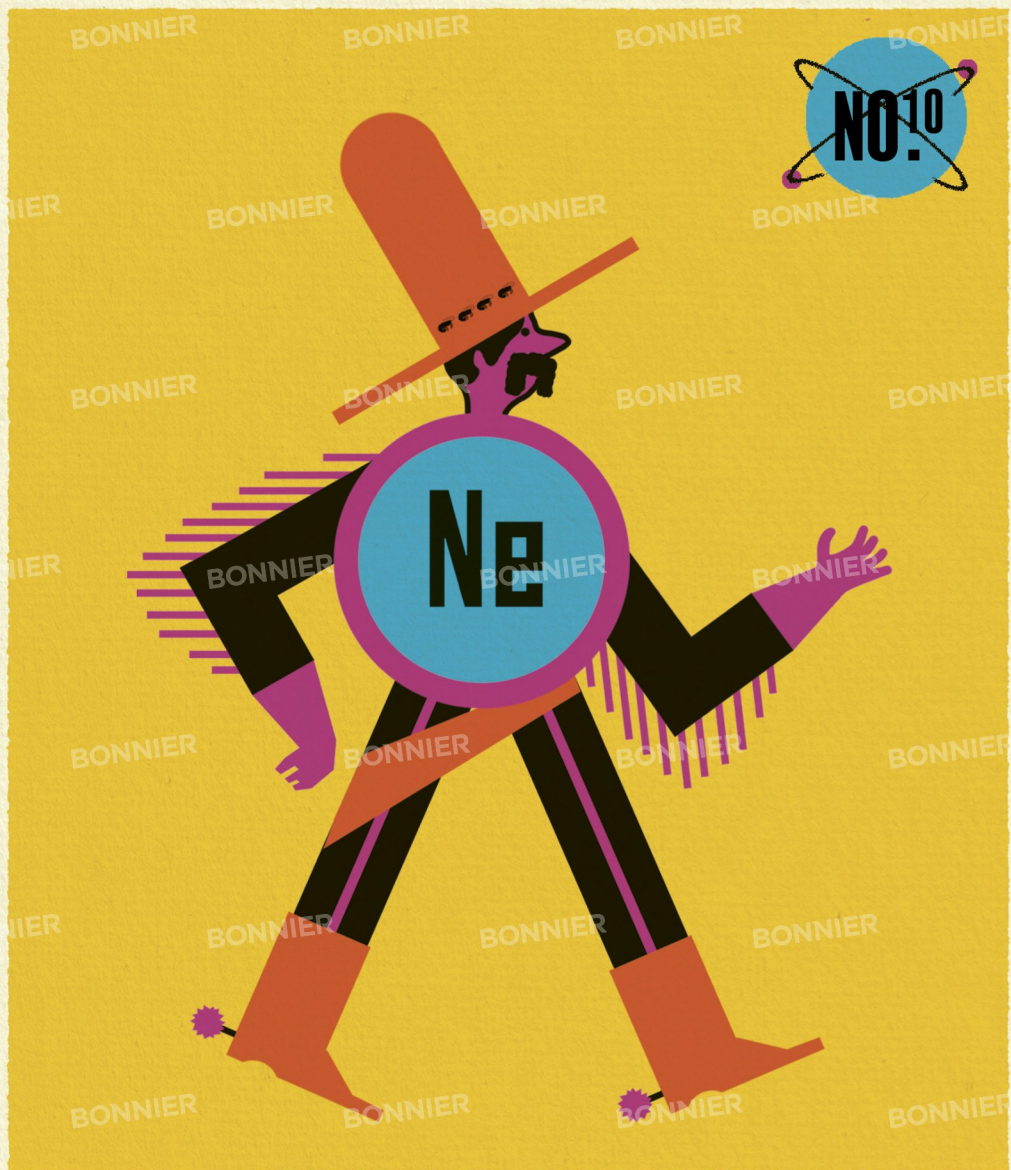
THE EXTRAORDINARY ELEMENTS

COLIN STUART AND XIMO ABADIA

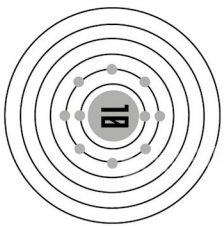


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NEON

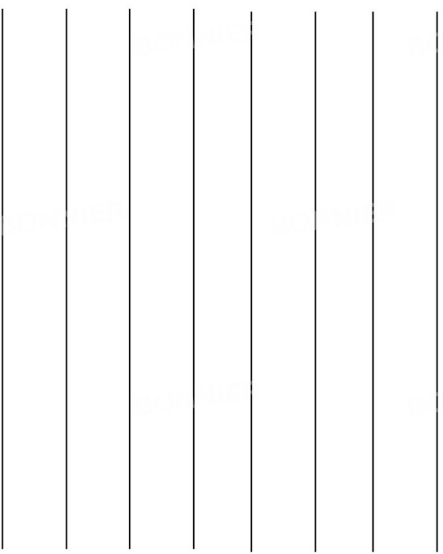


THE NOBLE GASES



THE EXTRAORDINARY ELEMENTS

COLIN STUART AND XIMO ABADIA

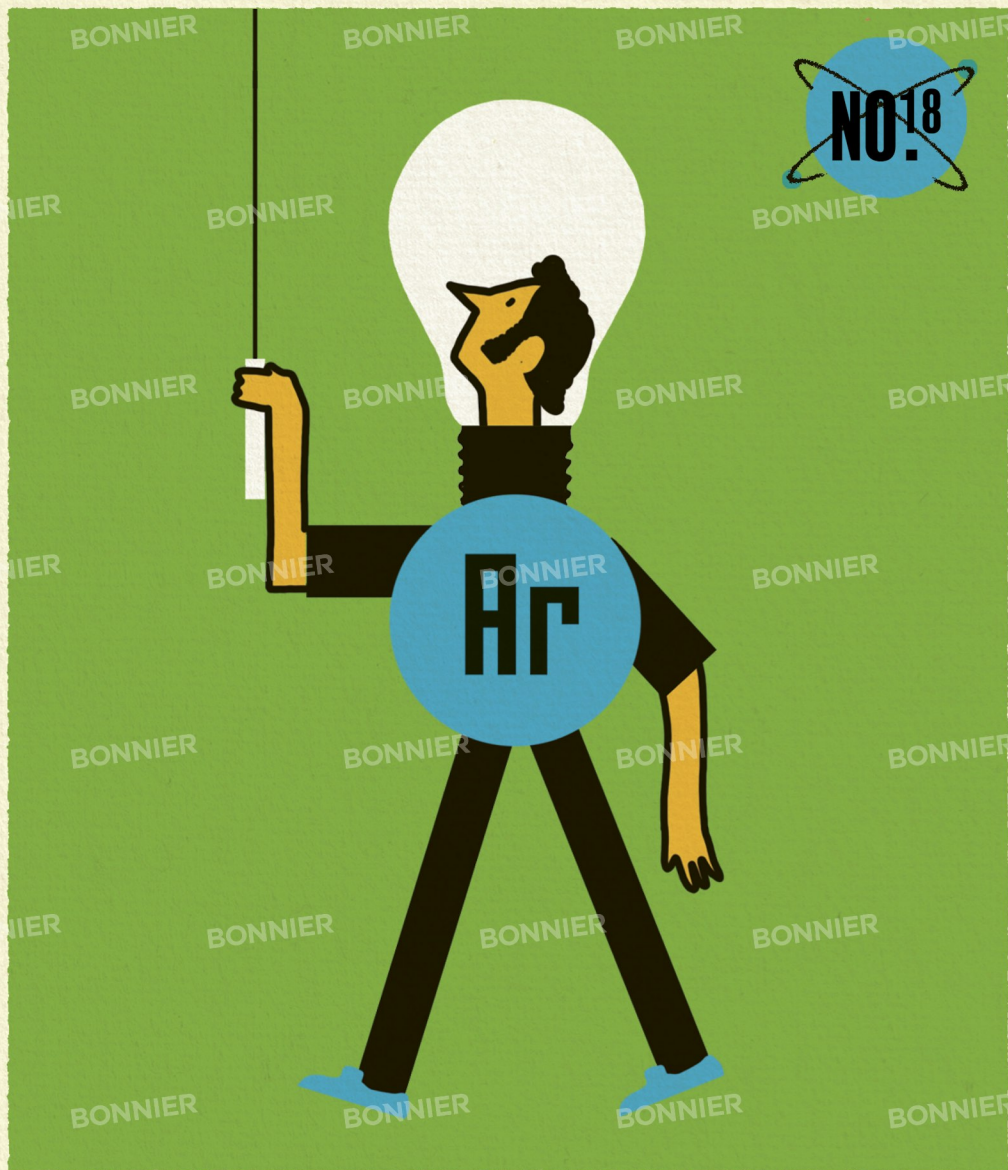


NEON

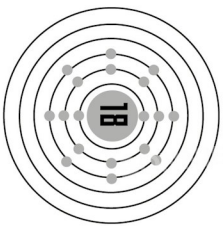
This element creates the iconic red-orange glow of neon signs, famously associated with Las Vegas, USA.

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ARGON



THE NOBLE GASES



ARGON

This element is found in fluorescent and incandescent lighting.

THE EXTRAORDINARY ELEMENTS

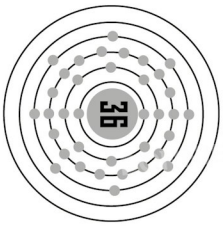
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KRYPTON



THE **NOBLE GASES**



THE EXTRAORDINARY ELEMENTS

COLIN STUART AND XIMO ABADIA

KRYPTON This element shares a similar name to the fictional material kryptonite

– Superman’s Achilles heel – but his enemy Lex Luthor reveals that it is actually made from sodium lithium boron silicate hydroxide with fluorine.

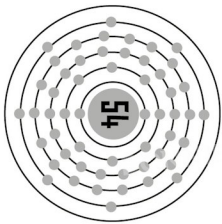
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XENON



Xe

THE NOBLE GASES



THE EXTRAORDINARY ELEMENTS

COLIN STUART AND XIMO ABADIA

XENON

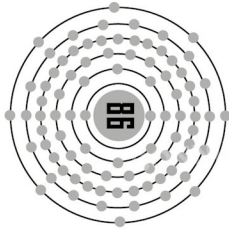
This is a common component used to power spacecraft engines.

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RADON



THE NOBLE GASES



THE EXTRAORDINARY ELEMENTS

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RADON

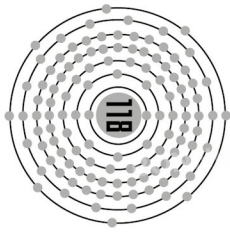
Radiation from this element can damage DNA.

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OGANESSON



THE SUPER-HEAVIES



OGANESSON

Named for Russian nuclear physicist Yuri Oganessian.

THE EXTRAORDINARY ELEMENTS

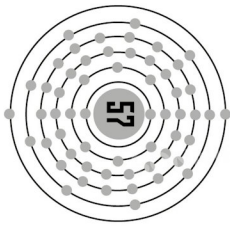
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LANTHANUM



THE LANTHANIDES



LANTHANUM

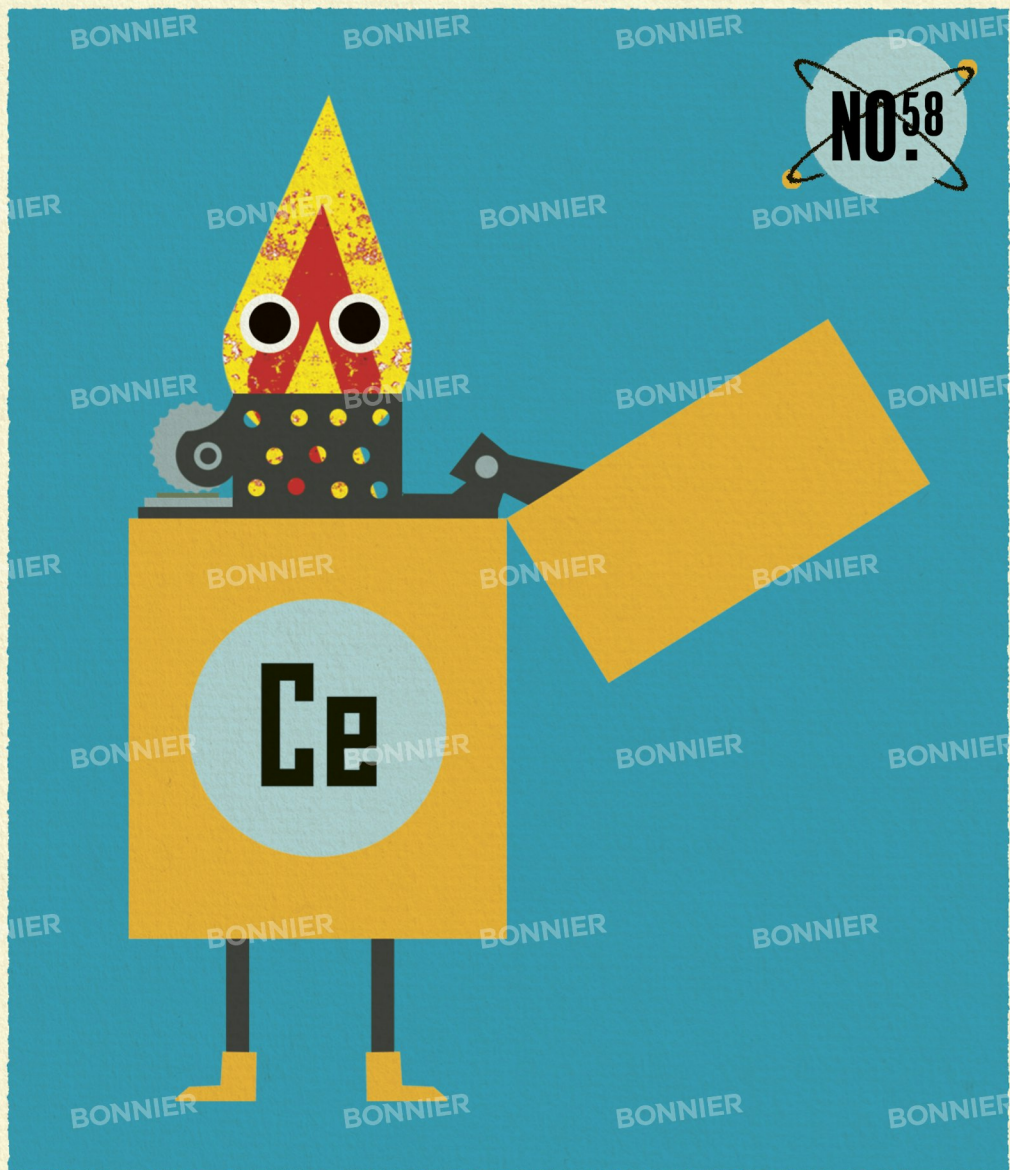
This element is extensively used in cinema projectors.

THE EXTRAORDINARY ELEMENTS

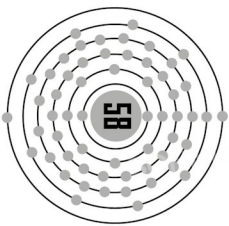
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CERIUM



THE LANTHANIDES



THE EXTRAORDINARY ELEMENTS

COLIN STUART AND XIMO ABADIA

CERUM

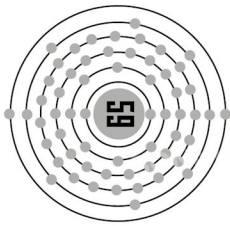
This element sparks when heated and is therefore used in lighters.

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PRASEODYMIUM

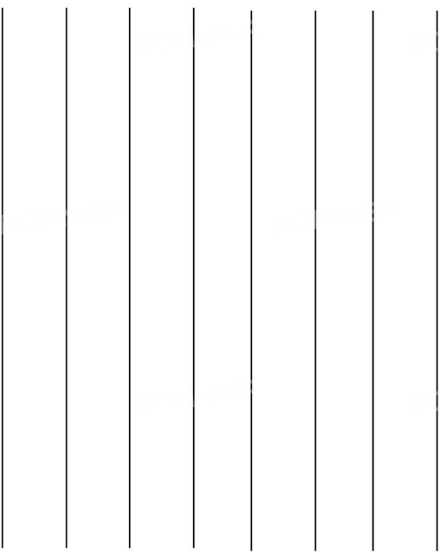


THE LANTHANIDES



THE EXTRAORDINARY ELEMENTS

COLIN STUART AND XIMO ABADIA

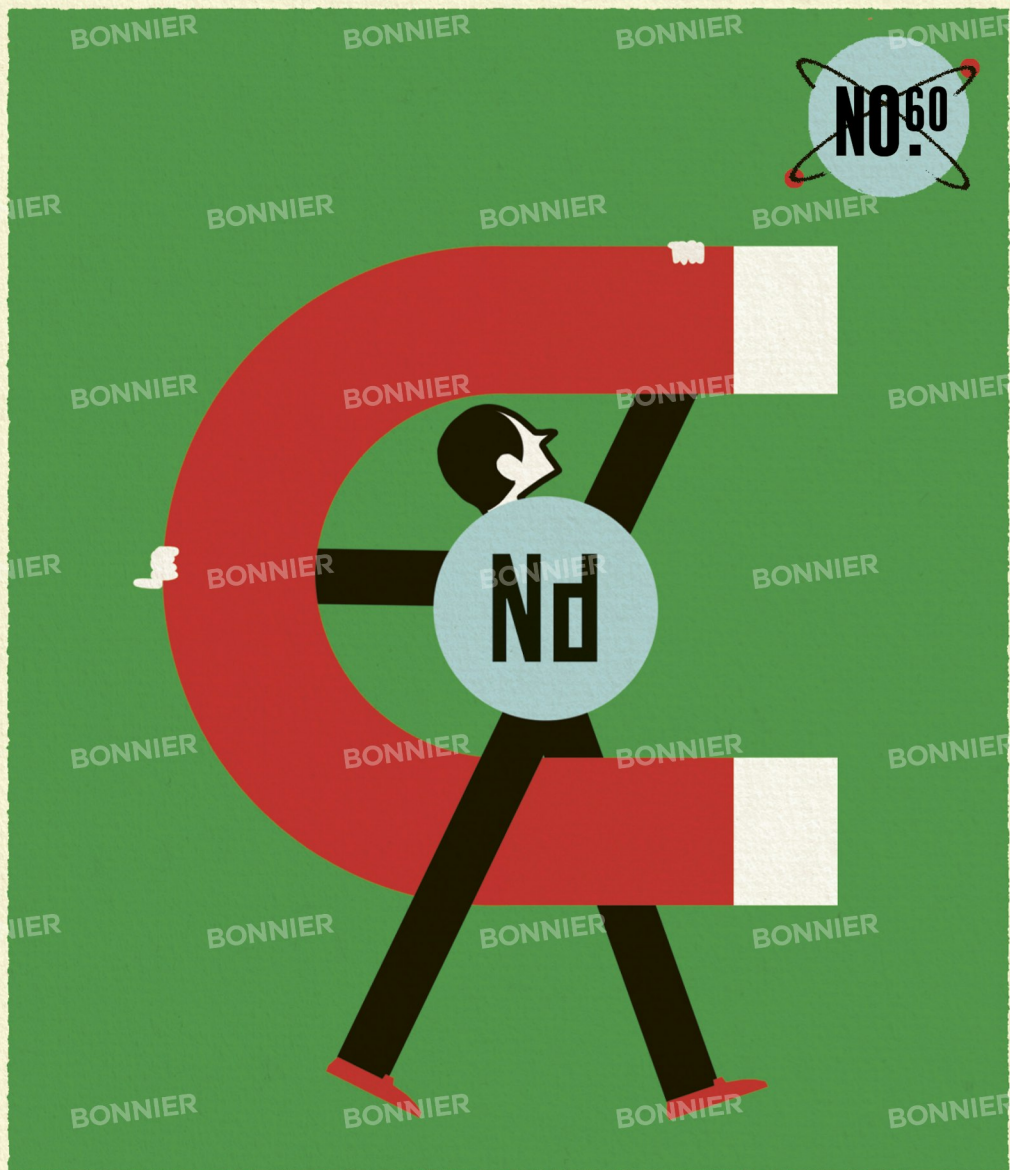


PRASEODYMIUM

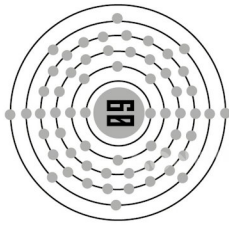
This is a key ingredient in some lamps used by film studios.

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NEODYMIUM



THE LANTHANIDES



NEODYMIUM

Neodymium alloy magnets are the strongest in the world.

THE EXTRAORDINARY ELEMENTS

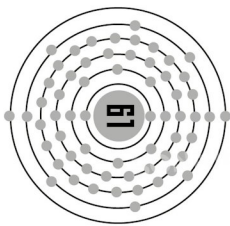
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PROMETHIUM



THE LANTHANIDES



THE EXTRAORDINARY ELEMENTS

COLIN STUART AND XIMO ABADIA

PROMETHIUM

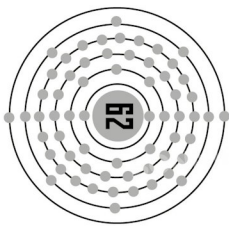
Named after Prometheus, who stole fire in Greek mythology.

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SAMARIUM



THE LANTHANIDES



THE EXTRAORDINARY ELEMENTS

COLIN STUART AND XIMO ABADIA

SAMARIUM

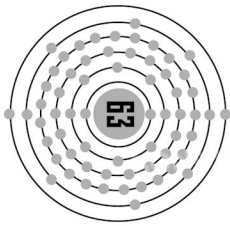
This element was used to motor the first solar-powered plane.

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EUROPIUM



THE LANTHANIDES



THE EXTRAORDINARY ELEMENTS

COLIN STUART AND XIMO ABADIA

EUROPIUM

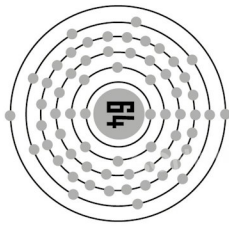
This element is used in printing euro bank notes to prevent counterfeiting.

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GADOLINIUM



THE LANTHANIDES



THE EXTRAORDINARY ELEMENTS

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GADOLINIUM

This element is found in components used in nuclear reactors.

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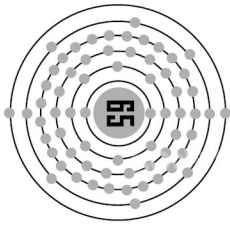
TERBIUM

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Tb



THE LANTHANIDES



THE EXTRAORDINARY ELEMENTS

COLIN STUART AND XIMO ABADIA

TERBIUM

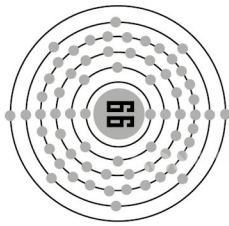
The control rods in nuclear submarines are made of this element.

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DYSPROSIUM



THE LANTHANIDES



THE EXTRAORDINARY ELEMENTS

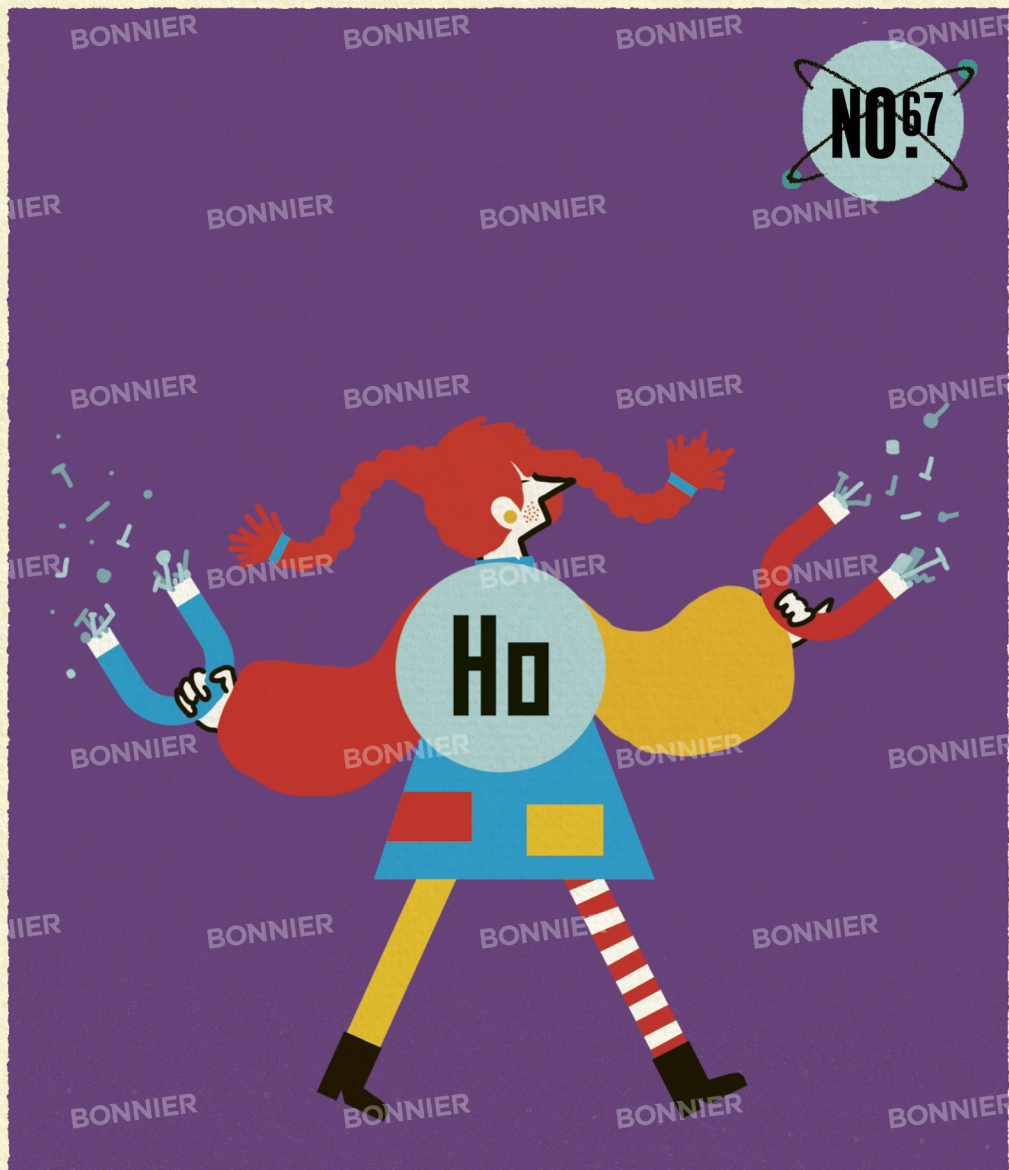
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DYSPROSIUM

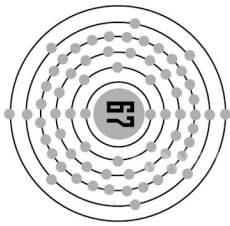
This element is commonly used for wind turbine engines.

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HOLMIUM



THE LANTHANIDES



THE EXTRAORDINARY ELEMENTS

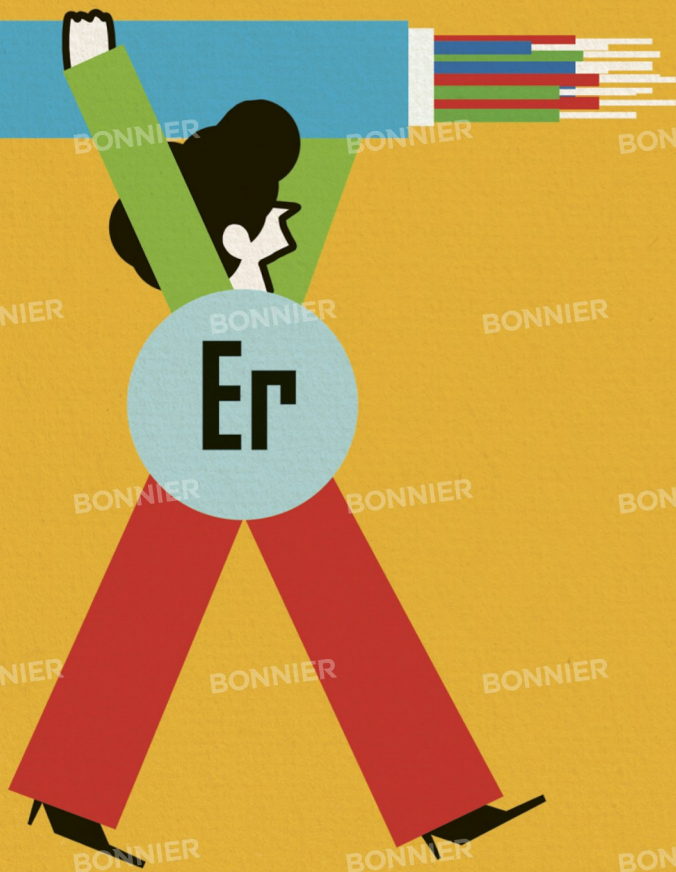
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HOLIUMIUM

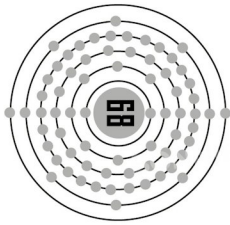
Named after Stockholm (the Latin word for the city is 'Holmia').
holmium has the highest magnetic strength.

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ERBIUM



THE LANTHANIDES



THE EXTRAORDINARY ELEMENTS

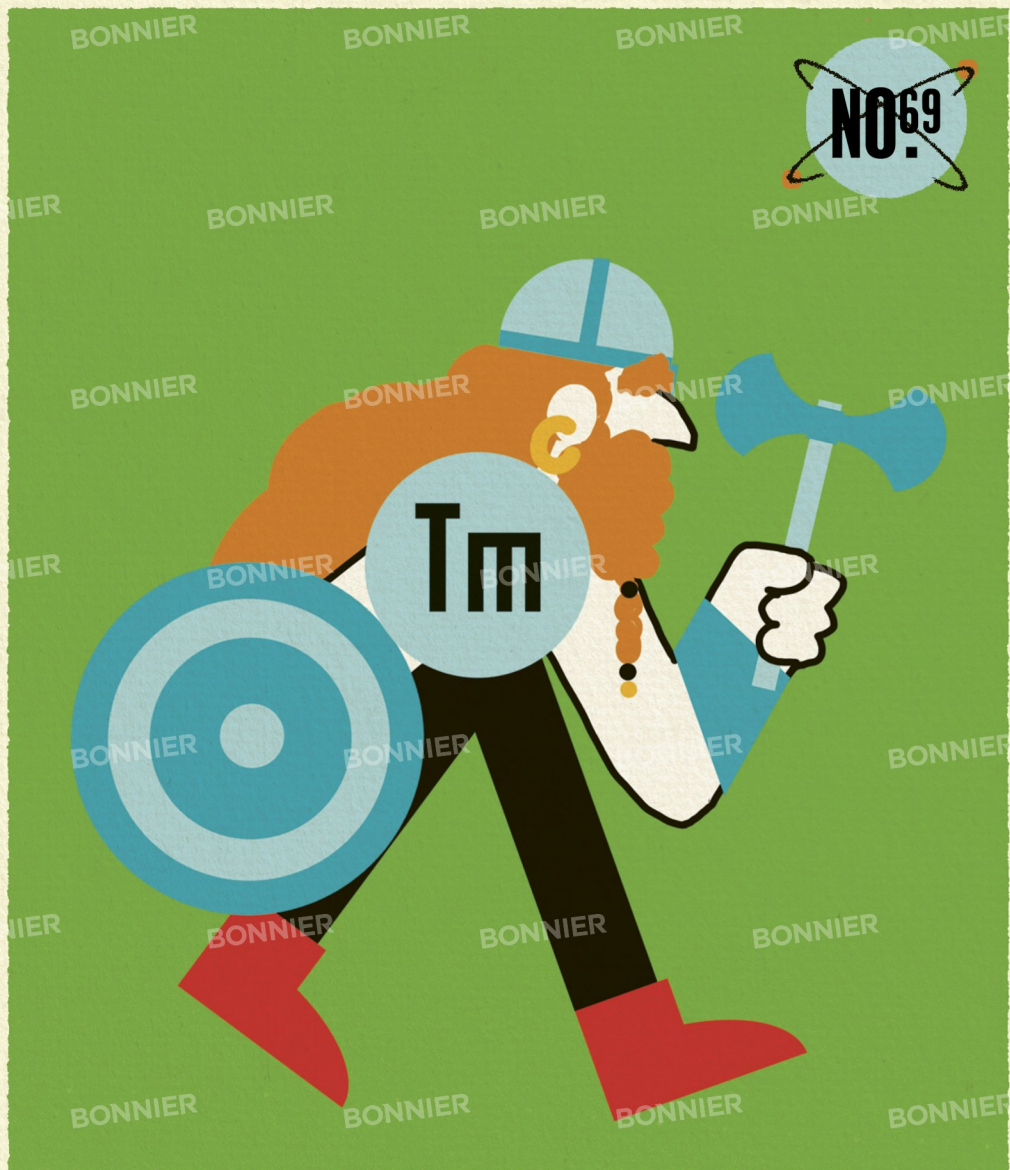
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ERBIUM

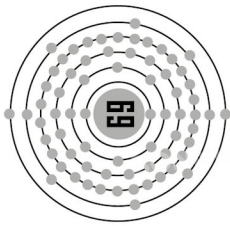
This element is commonly used in fibre optic cables to amplify broadband and telephone signals.

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THULIUM



THE LANTHANIDES



THE EXTRAORDINARY ELEMENTS

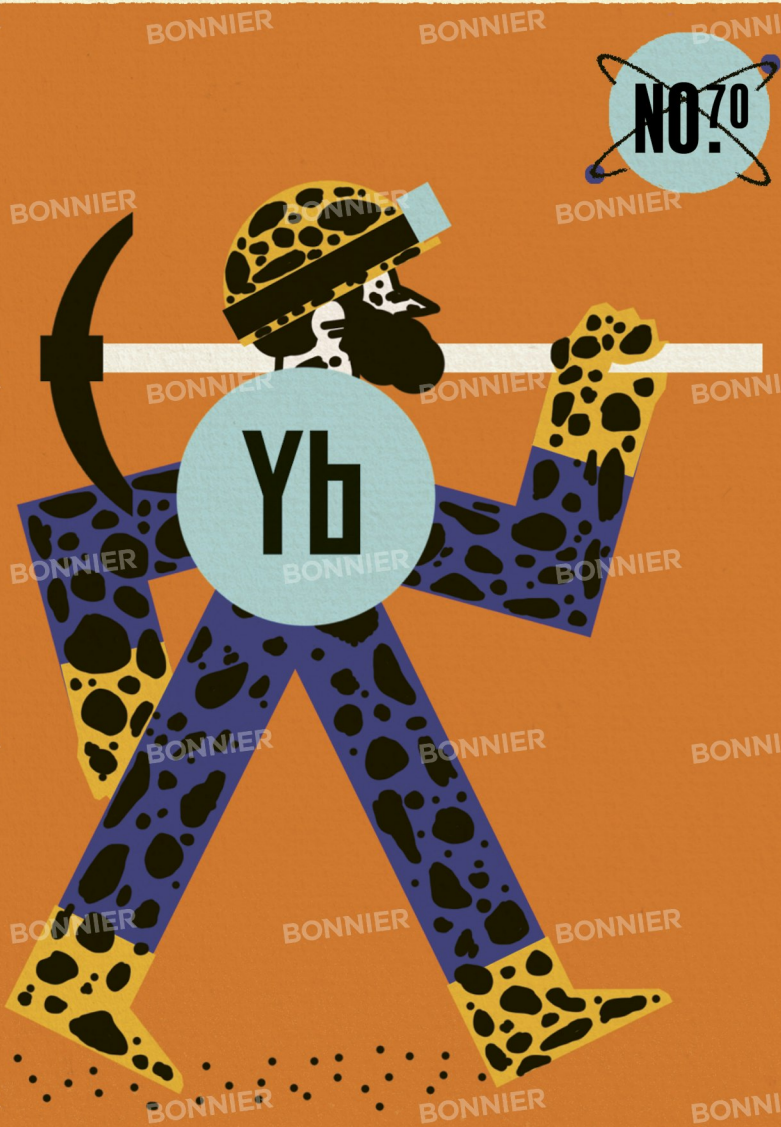
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THULIUM

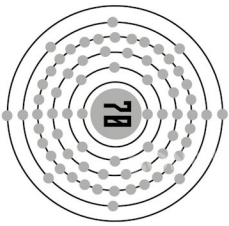
This element is named after Thule, the ancient name of a region close to Scandinavia, home of the Vikings.

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YTTERBIUM



THE LANTHANIDES



THE EXTRAORDINARY ELEMENTS

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YTTERBIUM

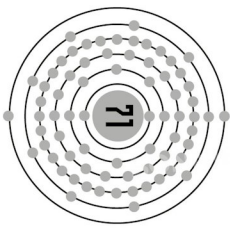
The town of Ytterby in Sweden is home to an infamous mine where four elements were discovered. Ytterbium is named after it.

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LUTETIUM



THE LANTHANIDES



THE EXTRAORDINARY ELEMENTS

COLIN STUART AND XIMO ABADIA

LUTETIUM

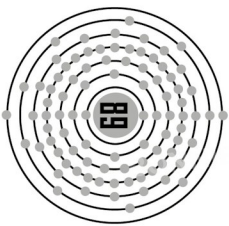
Named after Lutetia, the Latin word for Paris – home to the infamous painting by Leonardo da Vinci, the *Mona Lisa*.

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ACTINIUM



THE ACTINIDES

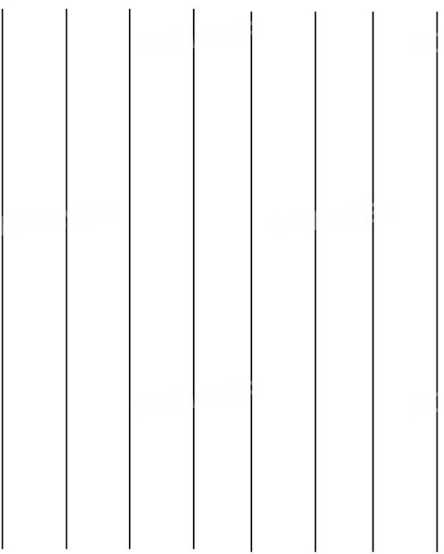


ACTINIUM

This extremely rare element glows blue in the dark.

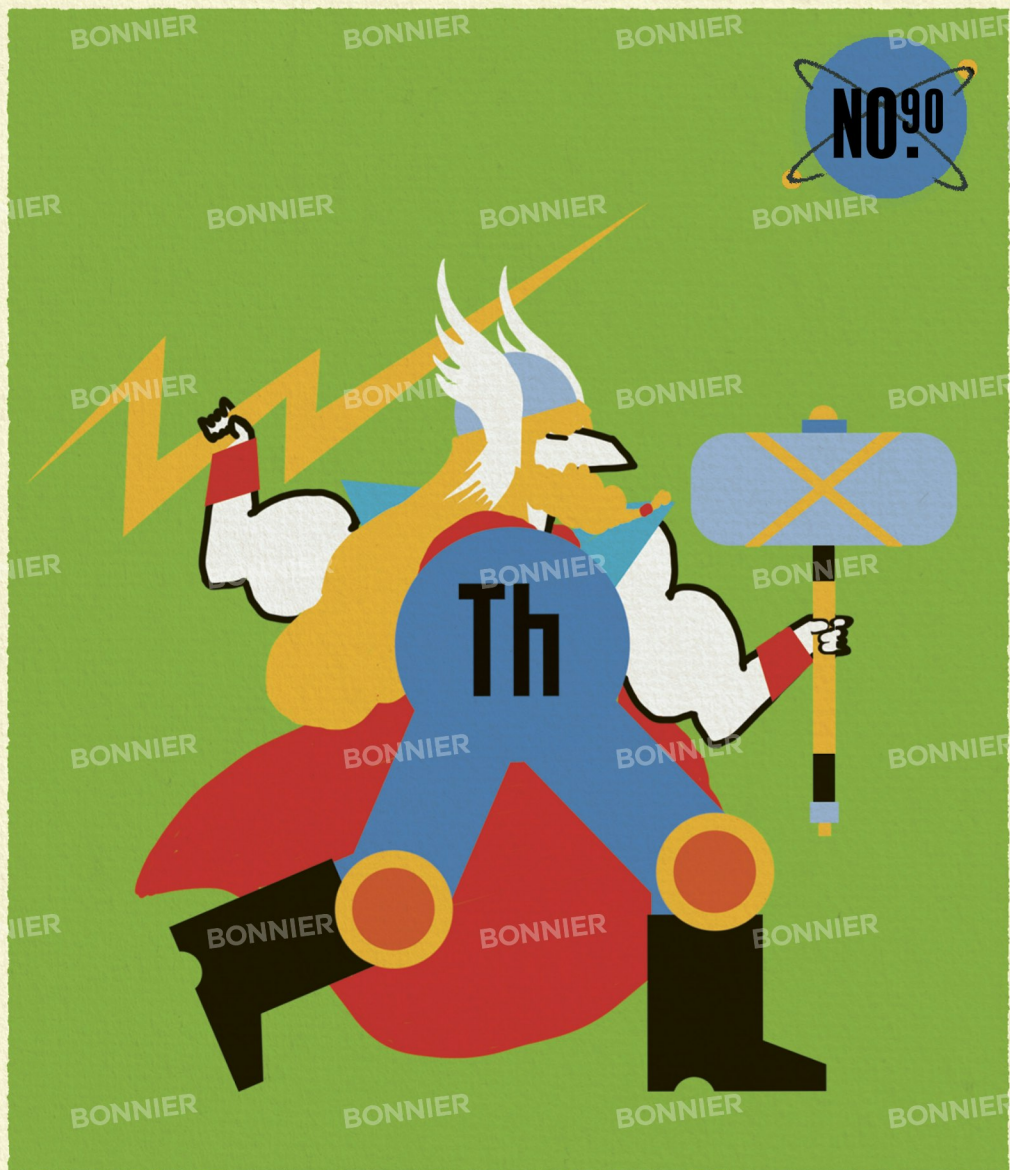
THE EXTRAORDINARY ELEMENTS

COLIN STUART AND XIMO ABADIA

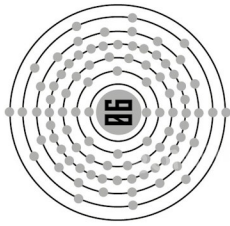


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THORIUM



THE ACTINIDES



THORIUM

Named after Thor, Norse god of war and thunder.

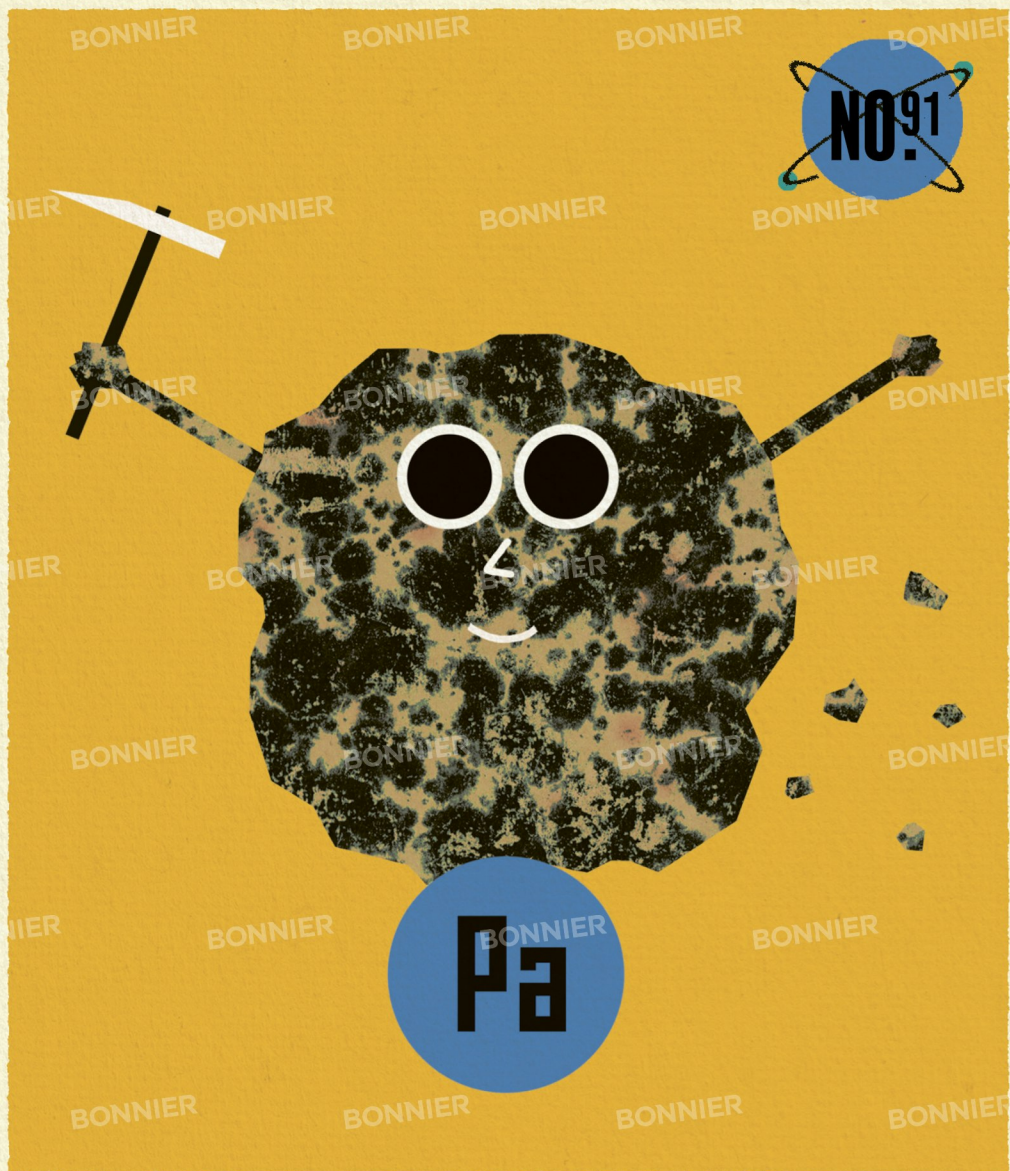
THE EXTRAORDINARY ELEMENTS

COLIN STUART AND XIMO ABADIA

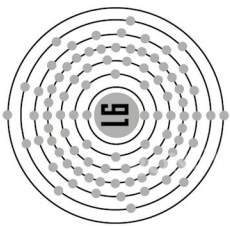
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PROTACTINIUM



THE ACTINIDES



THE EXTRAORDINARY ELEMENTS

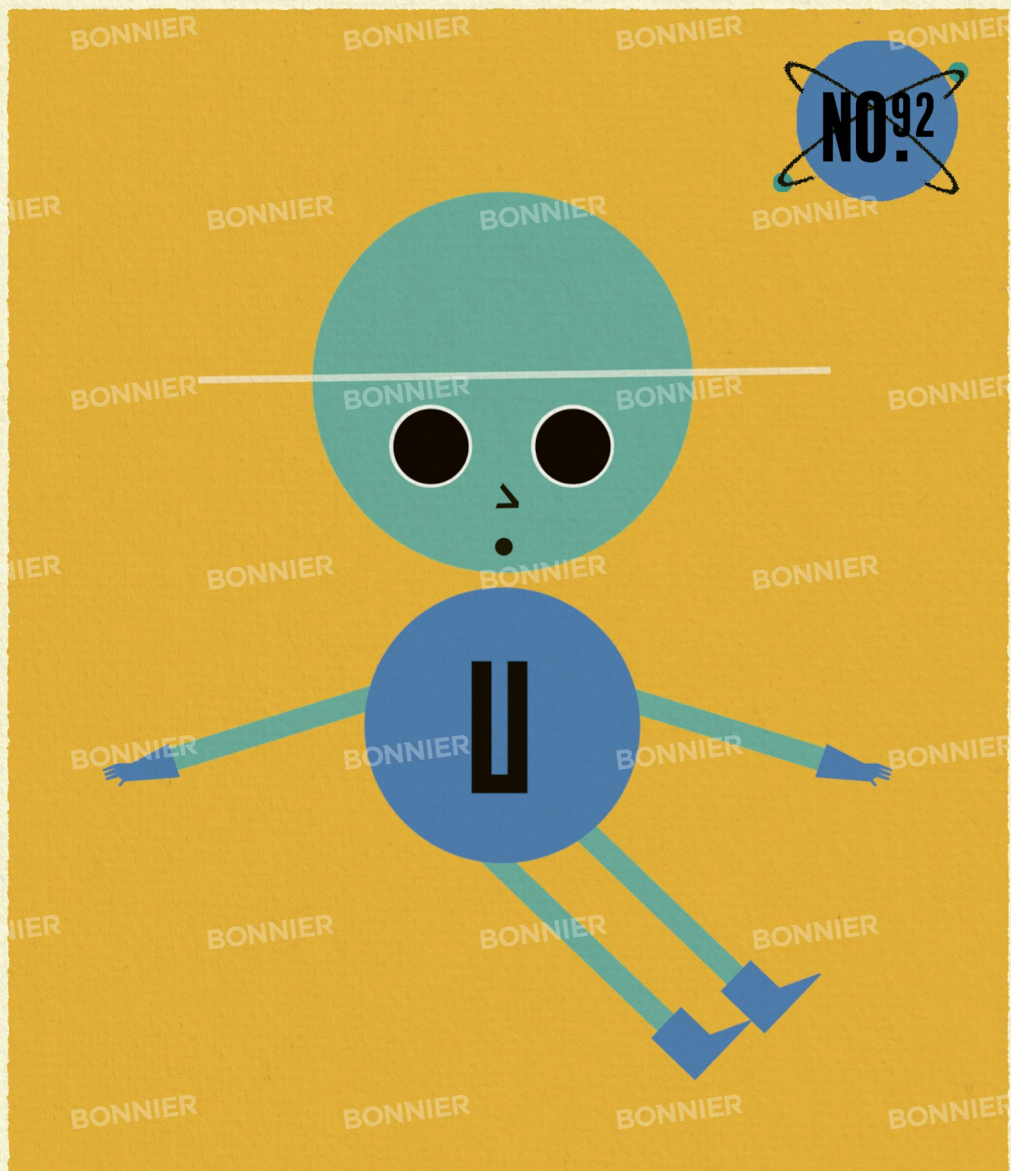
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PROTACTINIUM

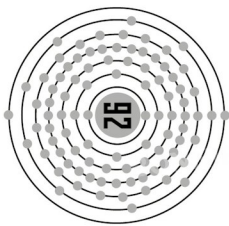
One of the rarest elements on Earth, the presence of protactinium in ocean sediments allowed geologists to work out how the sea changed during the last ice age.

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URANIUM



THE ACTINIDES



THE EXTRAORDINARY ELEMENTS

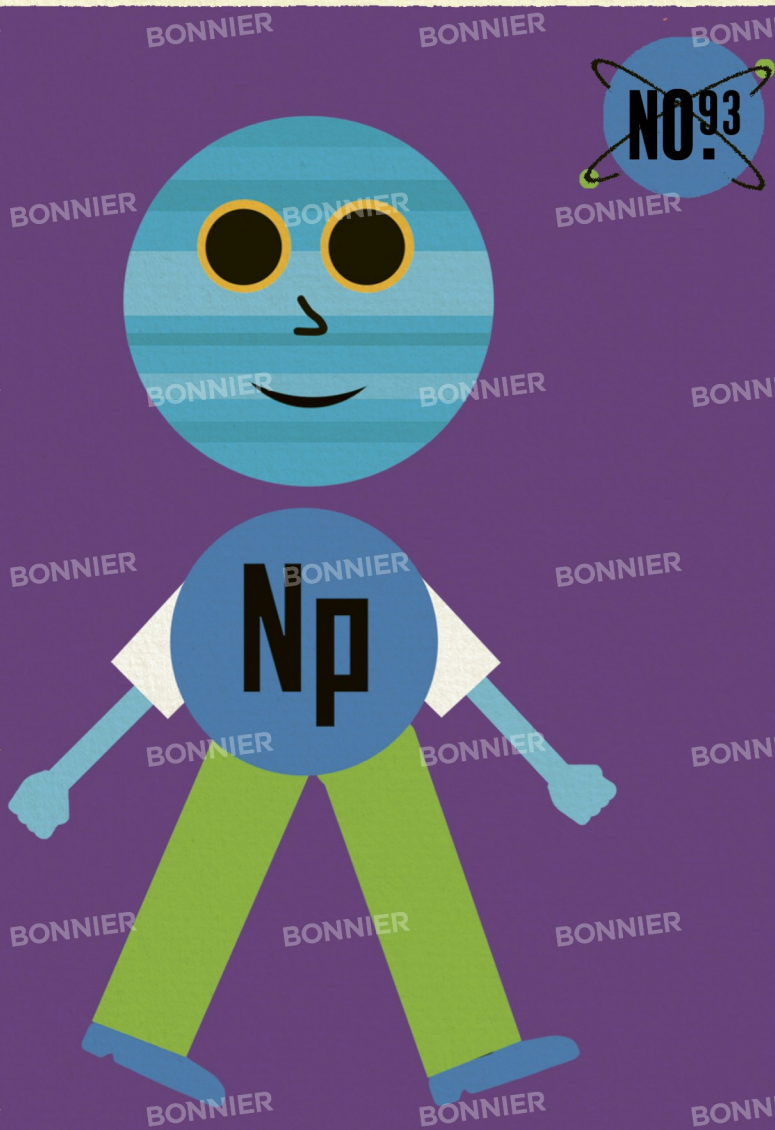
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URANIUM

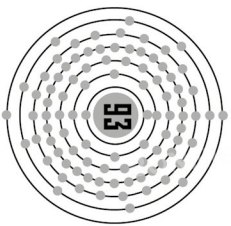
Named after the planet Uranus, this element is used in nuclear submarines and nuclear weapons.

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NEPTUNIUM



THE ACTINIDES



THE EXTRAORDINARY ELEMENTS

COLIN STUART AND XIMO ABADIA

NEPTUNIUM

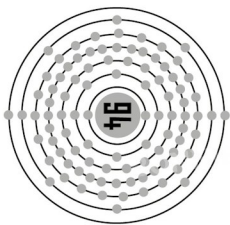
Named after the planet Neptune, this element can spontaneously catch fire at room temperature.

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PLUTONIUM



THE ACTINIDES



THE EXTRAORDINARY ELEMENTS

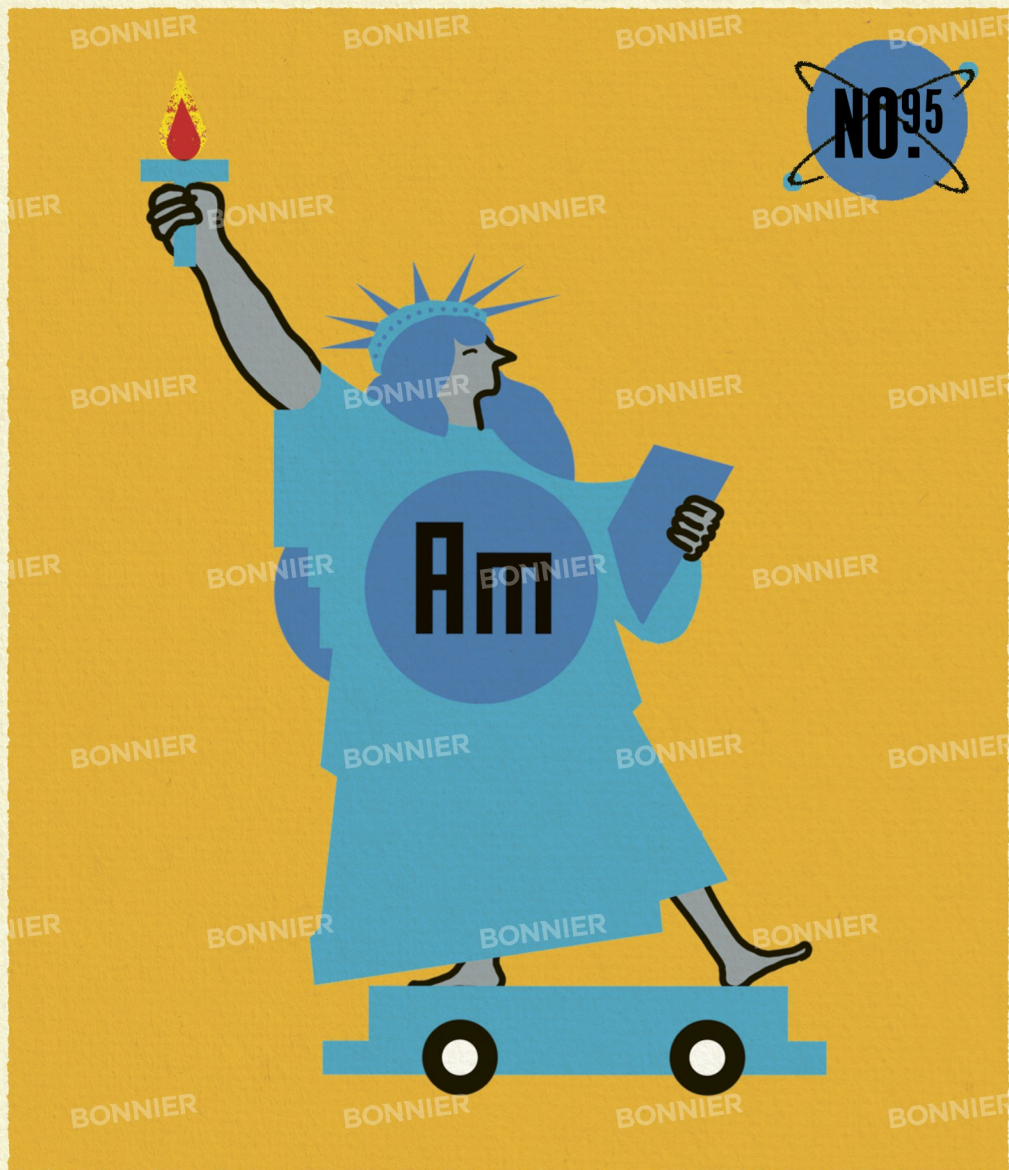
COLIN STUART AND XIMO ABADIA

PLUTONIUM

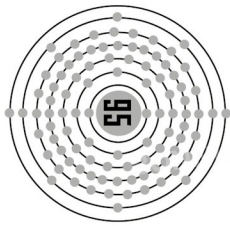
Named after the dwarf planet Pluto, the space-themed name of this element is very apt as it is used as fuel for robotic spacecraft.

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AMERICIUM



THE ACTINIDES



THE EXTRAORDINARY ELEMENTS

COLIN STUART AND XIMO ABADIA

AMERICIUM

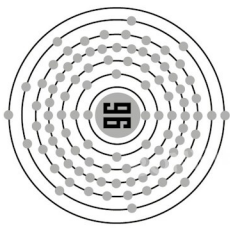
Named after the Americas, americium is used in smoke detectors.

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CURIUM



THE ACTINIDES



THE EXTRAORDINARY ELEMENTS

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CURIUM

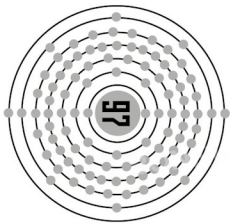
Named after Pierre and Marie Curie who carried out pioneering work on radioactivity.

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BERKELIUM



THE ACTINIDES



THE EXTRAORDINARY ELEMENTS

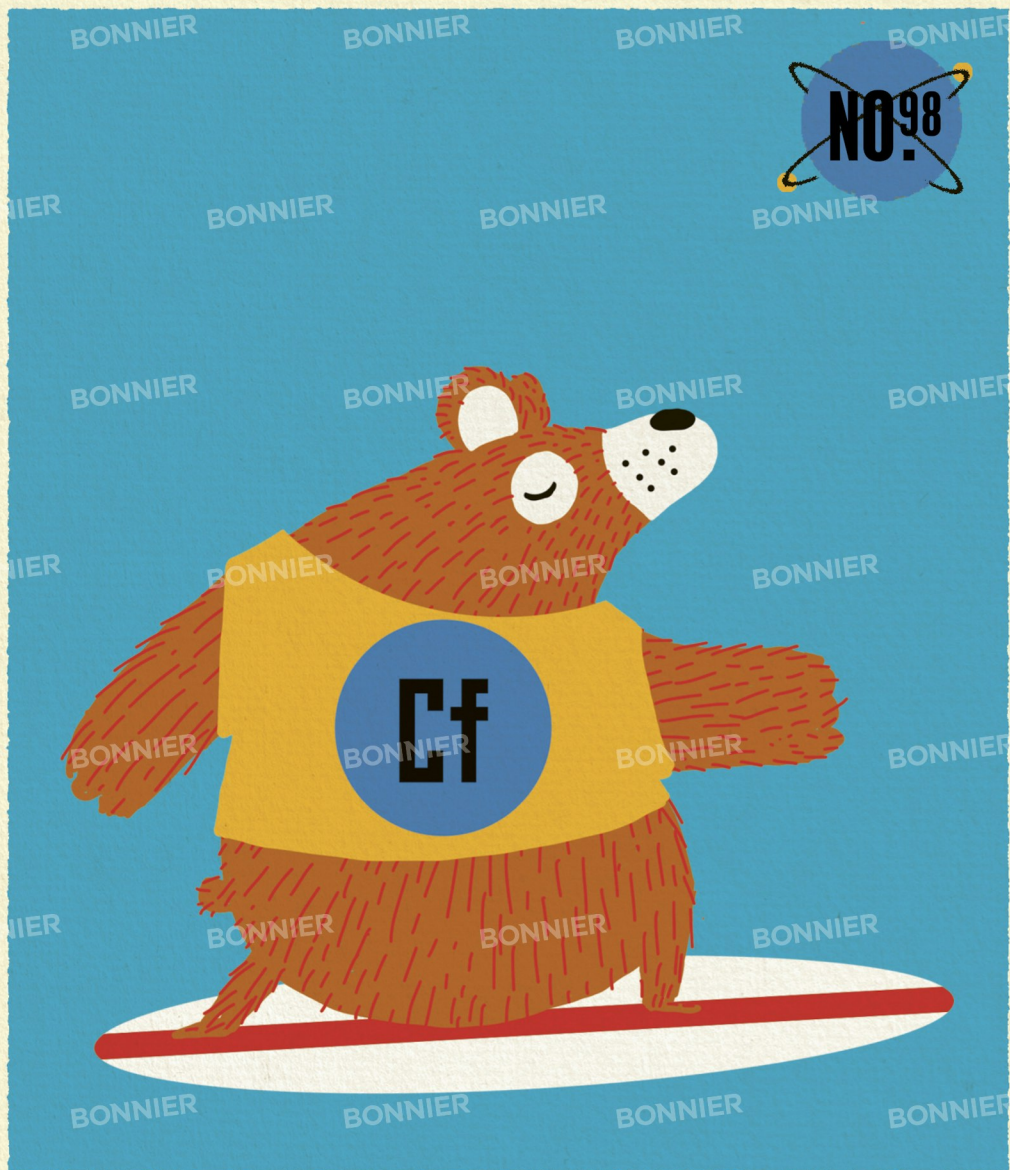
COLIN STUART AND XIMO ABADIA

BERKELIUM

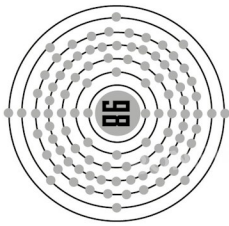
Named after Berkeley, the Californian city where it was discovered. Berkeley has a long history of protests, including civil rights.

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CALIFORNIUM



THE ACTINIDES



THE EXTRAORDINARY ELEMENTS

COLIN STUART AND XIMO ABADIA

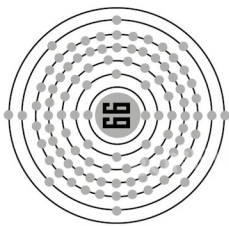
CALIFORNIVM Also discovered at Berkeley, californium is used in some cancer treatments.

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EINSTEINIUM



THE ACTINIDES



THE EXTRAORDINARY ELEMENTS

COLIN STUART AND XIMO ABADIA

EINSTEINIUM

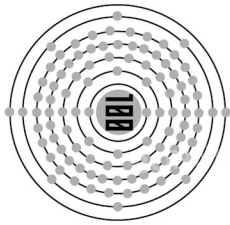
Named in honour of Albert Einstein, this element is incredibly rare and extremely radioactive.

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FERMIUM



THE ACTINIDES



THE EXTRAORDINARY ELEMENTS

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FERMIUM

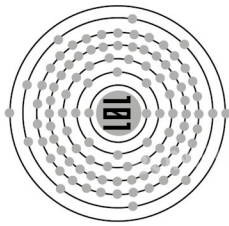
Named after Enrico Fermi, who designed the first nuclear reactor.

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MENDELEVIVM



THE ACTINIDES



THE EXTRAORDINARY ELEMENTS

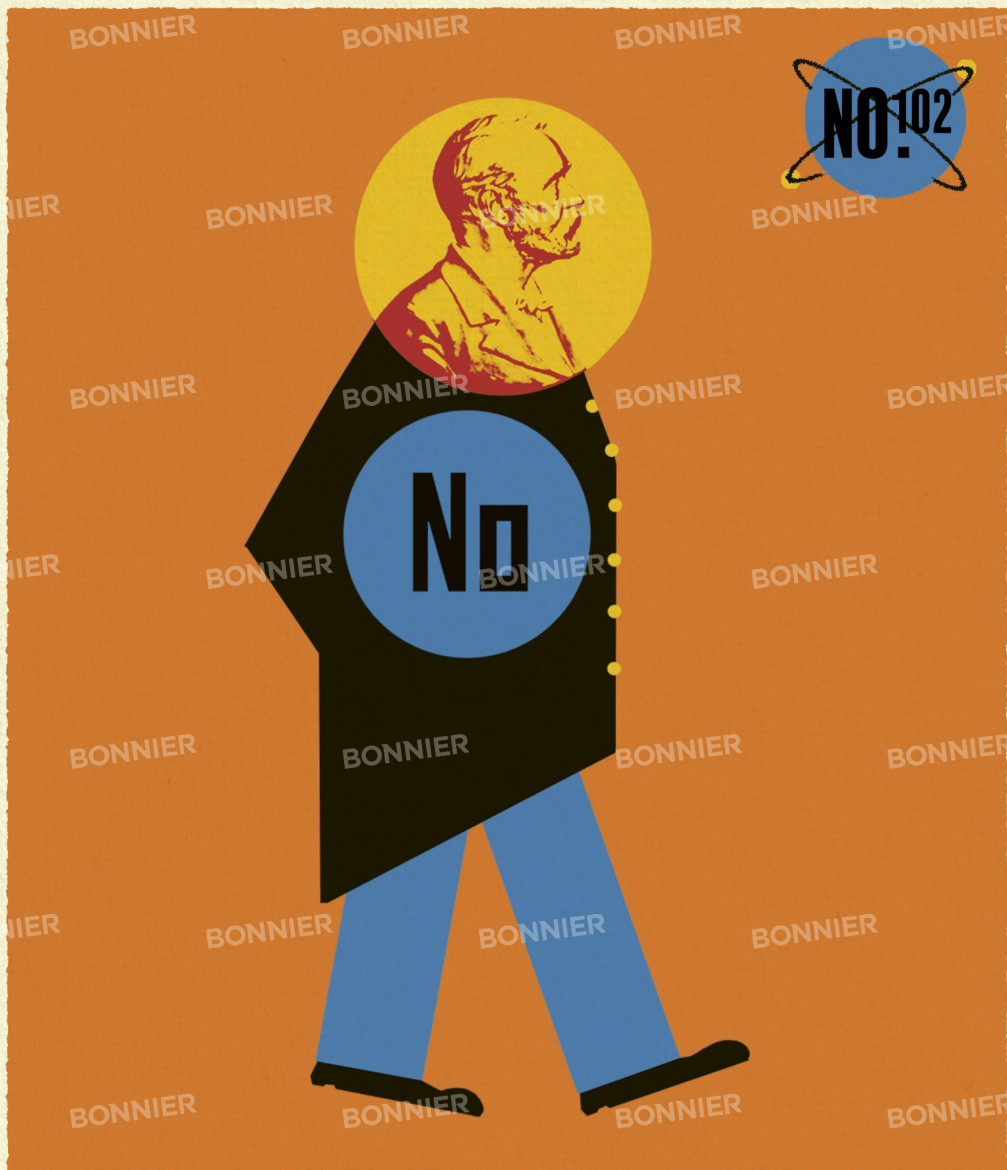
COLIN STUART AND XIMO ABADIA

MENDELEVIUM

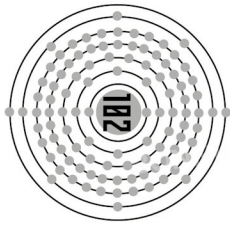
Named after Mendeleev, father of the periodic table.

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NOBELIUM



THE ACTINIDES



THE EXTRAORDINARY ELEMENTS

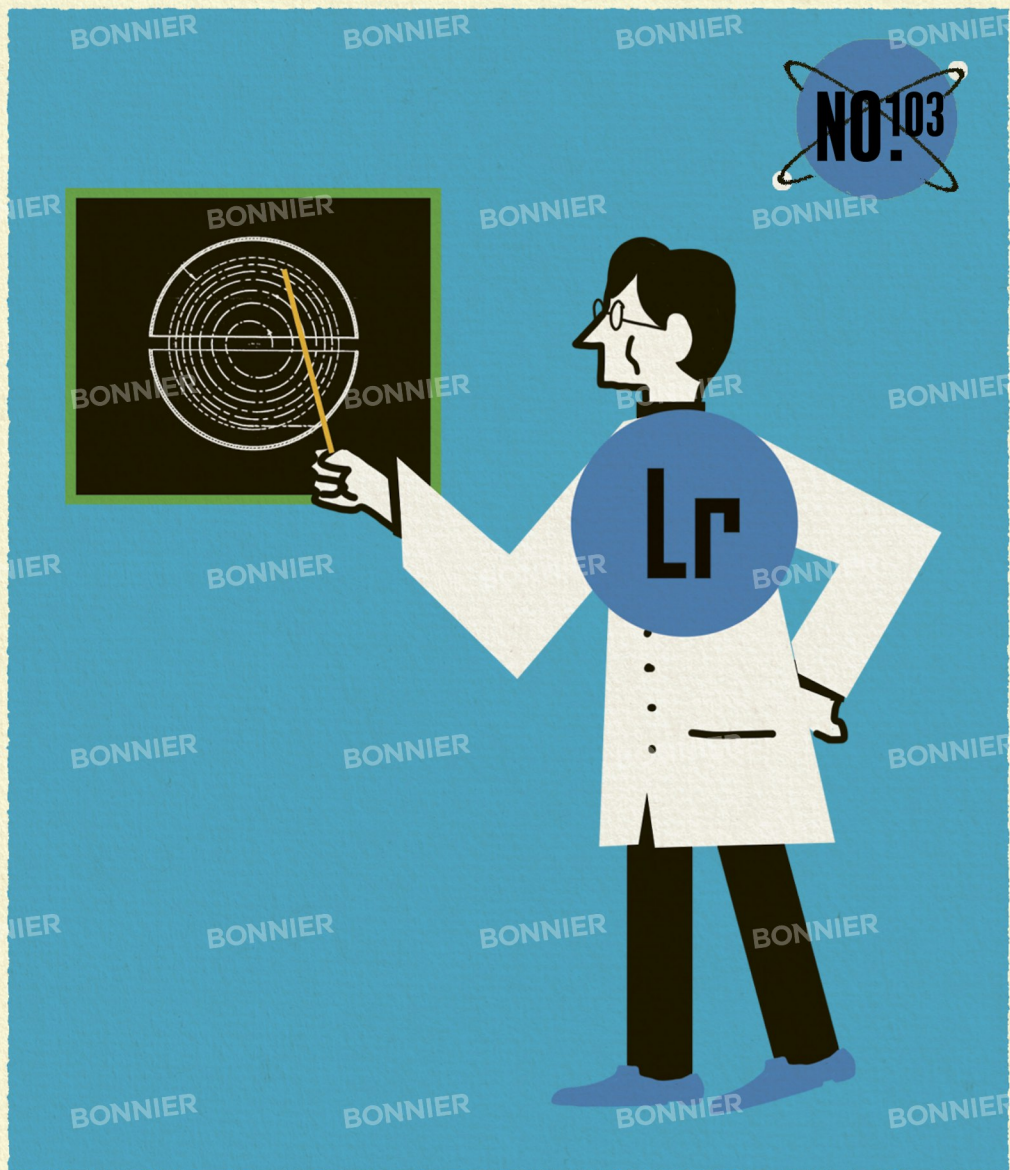
COLIN STUART AND XIMO ABADIA

NOBELIUM

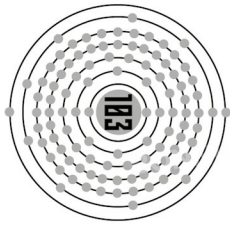
Named after Alfred Nobel, the creator of the Nobel Prize.

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LAWRENCIUM



THE ACTINIDES



LAWRENCIUM

Named after American physicist Ernest Lawrence.

THE EXTRAORDINARY ELEMENTS

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