

# SCIENCE & NATURAL HISTORY

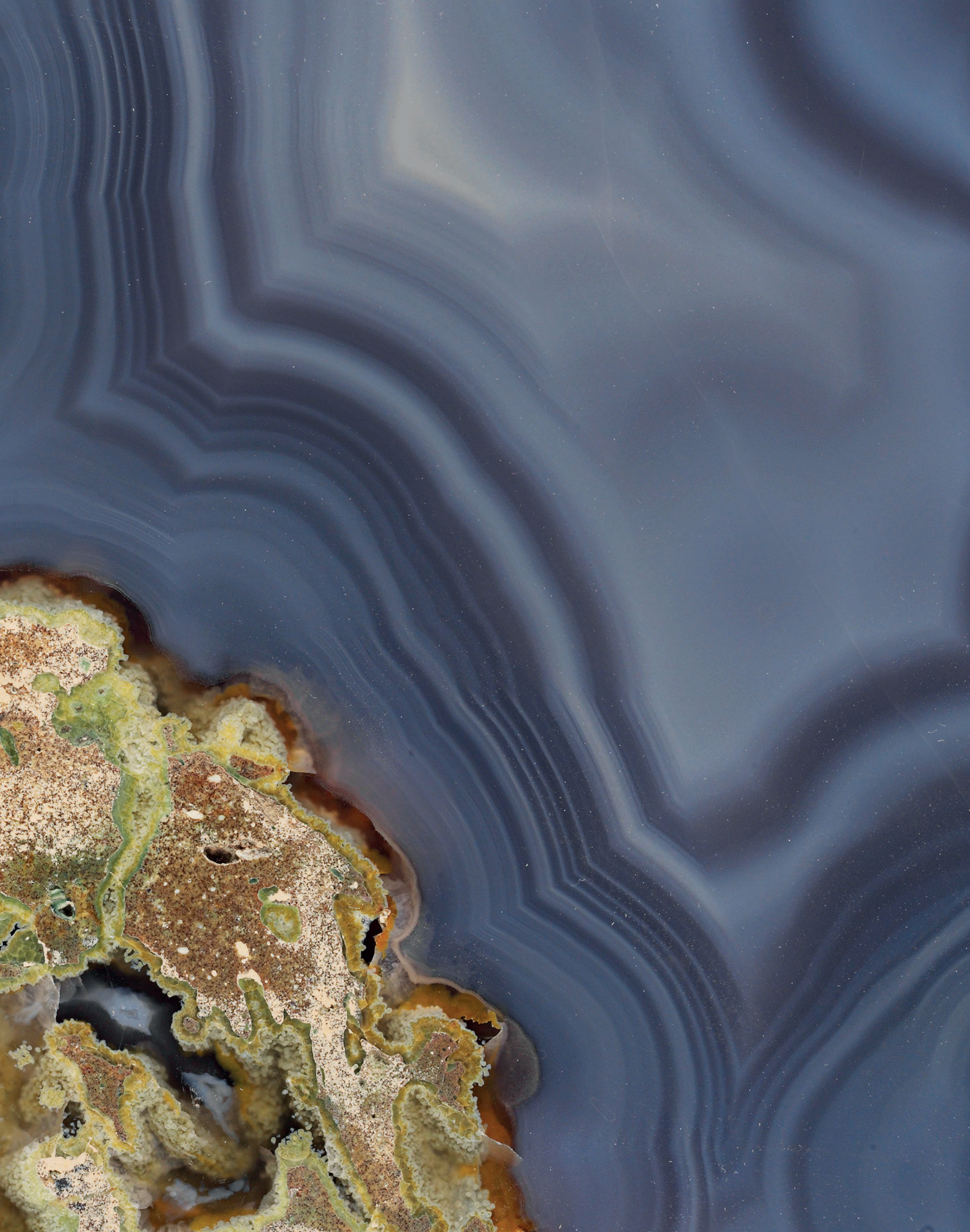
*London*

*10 July 2018*



CHRISTIE'S











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## SCIENCE & NATURAL HISTORY

TUESDAY 10 JULY 2018



James Hyslop



Claire Toole

### AUCTION

Tuesday 10 July 2018  
at 2.00 pm Lots 1-156  
8 King Street, St. James's  
London SW1Y 6QT

### AUCTION CODE AND NUMBER

In sending absentee bids or making enquiries, this sale should be referred to as **EOCENE-15937**

### VIEWING

Saturday	7 July	12.00 pm – 5.00 pm
Sunday	8 July	12.00 pm – 5.00 pm
Monday	9 July	9.00 am – 4.30 pm and 6.00 pm – 8.30 pm

### AUCTIONEER

Nick Martineau

### STORAGE AND COLLECTION

Please refer to the important notice on page 123. Please note that Cadogan Tate's opening hours are Monday to Friday 9am to 5pm, and purchases transferred to their warehouse are not available for collection at weekends.

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Front cover: Lot 85  
Back cover: Lot 49  
Inside front cover: Lot 44, 109  
Inside back cover: Lot 43, 94

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[20]

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# CHRISTIE'S



SCIENTIFIC INSTRUMENTS (LOTS 1-15)







1

## AN ASTROLABE

PROBABLY SPANISH OR FRENCH, LATE 15TH CENTURY

The whole worn and rubbed rendering the engraving illegible in places, the mater with plain throne and loose suspension shackle, the rim engraved with 0-90° to each quadrant, the inside of the womb with circular opening cut through previous stereographic projection, four plates engraved to both sides with stereographic projections, one for 48° the final plate with shadow square to view through opening, the reverse of mater with calendrical scales and alidade, the rule attached to rete, horse replaced, the rete for 21 named stars. 4½in. (113mm.)

£20,000–30,000

\$27,000–40,000

€23,000–34,000

The astrolabe's origin probably dates at least as far back as the ancient Greek astronomer Hipparchus (c. 190-120 BC). As with so much astronomy, through the traditions of medieval Islamic science it was reintroduced to the Latin West by the thirteenth century, where it became a key time-telling instrument. Their production in Europe reached its zenith in the late Renaissance when they were made for princely collections and came to be the iconic instrument of astronomical knowledge.

A brass plate, the rete, carries hooked pointers for named stars and acts as a rotating celestial map above a grid that shows the lines of altitude and azimuth in the night sky; the owner of the astrolabe would be able to change the plate carrying the grid depending on how far North or South they were -- the mapping of the night sky onto a flat disc is done via a stereographic projection. The reverse of the astrolabe carries a compendium of different projections, a sundial and grid for trigonometry calculations, a calendar and a shadow square that can be used to measure the heights of buildings. Around the back plate rotates an alidade with pinhole sights that are used to observe the height of the Sun or a given star (the taking of a star's position gives the ancient greek etymology astro-labos, 'star-taker').

A recent discovery in Spain, the simple throne of this astrolabe shows the influence of the Islamic tradition of astrolabists. While the engraving is very rubbed in places, beneath the alidade on the reverse it was protected from corrosion and is of late Gothic style. Using the method published by Jon Davis 'Dating an Astrolabe from its Calendar Scale' *Bulletin of the Scientific Instrument Society*, No. 137, 2017 a production in the second half of the 15th century can be inferred.





2

**A GEORGE II STANDING UNIVERSAL EQUINOCTIAL RING DIAL**

JONATHAN SISSON, CIRCA 1730

The leaded brass dial signed to the alidade *J Sisson London*, meridian ring with hours I-XII-I-XII divided to the minute, equinoctial ring with degree scale 90°-0-90°, alidade plate with two hinged alidades, one for calendrical scale the other a zodiacal scale, lacking compass rose, the base plate rotating and engraved with two calendrical scales for *WATCH SLOWER WATCH FASTER*.

12in. (30cm. high)

£20,000-30,000

\$27,000-40,000

€23,000-34,000

**LITERATURE:**

D. Hawker, 'A standing dial by J. Sisson', *Bulletin of British Sundial Society*, Vol 29 (iii) 2017

A highly rare and early form of the standing equinoctial dial. Seemingly based on the elaborate designs by John Rowley (1668-1728), for an example of which see Christie's Monaco 10 December 1999 lot 490. The two ring equinoctial ring dial was invented by the Mathematician William Oughtred (1574-1660) and described in his 1652 book on sundials. Unlike horizontal garden sundials that are designed for use at a fixed latitude it can be used anywhere on earth, at any latitude.

A sundial with a high level of accuracy such as this would have often been used to set a clock or watch to local solar time. A clock can keep the time, of course, but not find it; so the use of an accurate sundial is required.



-3

**A MICROSCOPE COMPENDIUM**

GEORG FRIEDRICH BRANDER, CIRCA 1760

The fishskin case lined with green felt with fitted recesses for accessories with ivory parts, the compass and screw-barrel microscopes both signed *G.F. Brander fecit. Aug. Vind.* beneath tray of four lenses a compartment for cocus wood microscope slides, one handle missing else seemingly complete.  
7½ x 5 x 2in. (19 x 12.5 x 5cm.)

£20,000–30,000

\$27,000–40,000

€23,000–34,000

Georg Friedrich Brander was born at Regensburg in 1713, and studied mathematics at the university of Altdorf. He founded his workshop at Augsburg, and from 1737 until his death in 1783 he manufactured every type of philosophical, mathematical, and optical instrument. He began to make glass micrometers from 1761, for which he became famous. These were used in microscopy, and also in astronomy. It is thought that Brander's interest in making microscopes was due to the publication at Augsburg in 1754 of the German translation of Henry Baker, *Employment for the Microscope* (London, 1753).







4

4

**A LACQUERED BRASS MICROSCOPE**  
ANDREW ROSS, CIRCA 1880

Signed on Y-shaped foot A. ROSS London 3456, the No. 1 Type with rack and pinion focus, fully mechanical sub-stage, plaino-concave mirror, in original fitted mahogany case, with near complete drawer of accessories.  
21in. (53cm.) high in case

£4,000–6,000

\$5,400–8,100  
€4,600–6,800



5

5

**A LACQUERED BRASS PETROLOGICAL MICROSCOPE**

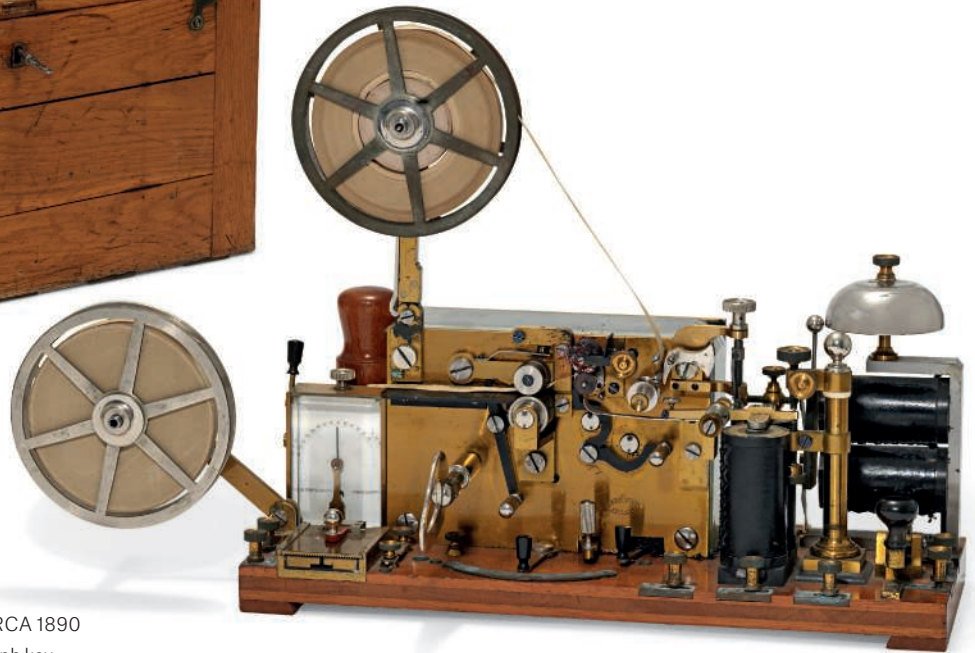
WATSON & SONS, CIRCA 1886

Signed on tripod foot WATSON & SONS 313 HIGH HOLBORN LONDON 1816, the "Wales" form with rack and pinion focus, fully mechanical sub-stage, plaino-concave mirror, in original fitted mahogany case, with fitted drawer of accessories (some lacking) and bullseye condensing lens.  
20in. (51cm.) high in case

£4,000–6,000

\$5,400–8,100  
€4,600–6,800





6

**A CASED TELEGRAPH**

L.M. ERICSSON & CO STOCKHOLM, CIRCA 1890

The lacquered brass instrument with telegraph key, galvanometer, two printing reels, ink well and winding mechanism, sliding into pine case with key. 8 x 15 x 7in. (21 x 39 x 17cm.) when closed

£1,500-2,500

\$2,100-3,400

€1,800-2,800



7

**A GERMAN TELLURIAN**

ERNST SCHOTTE, CIRCA 1890

The 3-inch terrestrial globe by Schotte with lithographed gores, candle holder over calendrical dial, signed *Schotte* [...] *Lith.v.P.Möhring* the geared mechanism beneath supported on cast iron bronze-painted base. 24in. (61cm.) wide

£2,000-3,000

\$2,700-4,000

€2,300-3,400





8



9

8

**A PAIR OF 9-INCH GLOBES**

SWEDISH AFTER AKRELL, 1864

Each comprised of 18 gores and two polar calottes, the terrestrial with cartouche *JORDGLOB Utgrifven af C. AKRELL 1864 Tillverkas af L.C. Hasselgren Stockholm* on heavier stand than celestial which carries cartouche *HIMMELS GLOB L.C. Hasselgren Stjemroias storlek* and is supported in longer meridian arc.

18in. (45.5cm.)

£4,000–6,000

\$5,400–8,100

€4,600–6,800

9

**A TERRESTRIAL GLOBE SUPPORTED BY HERCULES**

SCHOTTE, EARLY 20TH CENTURY

The 12-inch globe with cartouche *TERRESTRIAL GLOBE Carefully compiled from the best Authorities, Berlin, E. Schotte & Co*, supported on graduated brass half-meridian arc, on cast bronze stand of Hercules.

26½in. (67cm.) high

£2,500–3,500

\$3,400–4,700

€2,900–4,000



~10

**A GEORGE III ORRERY**

JOHN JONES, CIRCA 1790

The 12½-inch instrument comprised of working geared mechanism carrying a 1½-inch globe made up of twelve hand-coloured engraved gores, graduated equatorial, ecliptic and one meridian, Tasmania as a peninsula in New Holland, with brass twilight pointer and held above an angled ring to alter the height of the ivory moonball, a secondary ring graduated with the sigils for the houses of the Zodiac, and a disc showing the phases of the moon, on a complex multi-wheeled geared mechanism, at the centre the brass sunball mounted on the central axis, with planet arms for ivory planet Mercury and Venus, and brass index pointer; detachable, ivory handled crank handle, replacement oil lamp for sunball, the printed paper horizon plate with overlain cartouche *Sold by J. Jones No135 the corner of Bell & Crown Inn Holborn, London* a different, probably earlier, issue to the 1794 commonly seen. Graduated around the red-painted edge with days of the month and of the houses of the Zodiac with names, sigils and pictures, compass directions and degrees of amplitude and azimuth, circle for *EARTH'S ANNUAL ORBIT*, inner circle a map of solar system's outer planets with paths of comets, the latest being 1789. Housed in original oak case.

£8,000-12,000

\$11,000-16,000

€9,100-14,000

A rarely seen edition of the Jones New Portable Orrery.







■ 11

**A PAIR OF 15-INCH ENGLISH LIBRARY GLOBES**

G & J CARY, 1820/1827

The terrestrial cartouche: *CARY'S NEW TERRESTRIAL GLOBE* Drawn from the most recent *GEOGRAPHICAL WORKS, shewing the whole of the New Discoveries with the TRACKS of the PRINCIPAL NAVIGATORS and every improvement in Geography to the Present Time*. LONDON. London. Published by G. & J. Cary, St James's, St. Jany 4 1827, the sphere is made up of two sets of twelve hand-coloured engraved gores, graduated equatorial, ecliptic and four meridians, oceans with an analemma, seasonal passages in the Indian Ocean, and the tracks of explorers such as Cook, Vancouver, Butler, Furneaux, la Perouse, Gore, Ross and Clerke with notes and dates. The Antarctic with no coastline, the continents show pale orange, green and yellow shading for the nation states, with some faint remains of outlining. Details include: towns, cities, rivers, mountains, deserts and the great Wall of China. Australia shows the boundary between New Holland and New South Wales; Africa shows oases and copper mines, the Mountains of the Moon, NIME AMAY and UNKNOWN PARTS; North America shows territories of nations such as the Snake, Fall, Blackfoot, Rocky Mountain and Dog Rib Indians, and California is labelled Unexplored Countries.

The celestial cartouche: *CARY'S NEW CELESTIAL GLOBE, ON WHICH are carefully laid down the whole of the STARS AND NEBULÆ contained in the*

*Catalogues of Wollaston, Herschel, Bode, Piazzi, Zach &c. calculated to the Year 1820. Made & Sold by J. & W. Cary 181 Strand, London 1818*. The sphere is made up of two sets of twelve hand-coloured engraved gores laid to the ecliptic poles laid on a wood and plaster sphere, with the axis through the celestial poles, table giving the stars to eight orders of magnitude, with nebulæ, and a note below the cartouche explains the labelling with numbers, Greek characters, underlining and initials. The constellations are depicted by mythical beasts and figures and scientific instruments.

Both spheres have an engraved brass hour dial and meridian circle. The hand-coloured engraved paper horizon shows degrees of amplitude and azimuth, compass directions, days of the month and of the houses of the Zodiac, supported on four quadrant supports to a central turned column with three inswept legs with castors. A glazed compass is suspended between the legs signed in both cases *J. & W. CARY STRAND LONDON*, with a thirty-two point wind rose, graduations in both directions and a blued-steel needle. 39½in. (101cm.) high (2)

**PROVENANCE:**

Christie's South Kensington 6 April 2011, lot 101

£20,000–30,000

\$27,000–40,000

€23,000–34,000



Framställning medelst himmelsglob af himla-  
hvalfvets vigtigaste foreteelser.

§ 5. Himmelsglob. Den matematiska horisonten.

I bifogade bild 5 hafva vi aftecknat en apparat, en  
himmelsglob, hvars ändamål är att, så vidt möjligt, na-  
turtroget afbildna jordklotet och det skenbara himlahvalf-

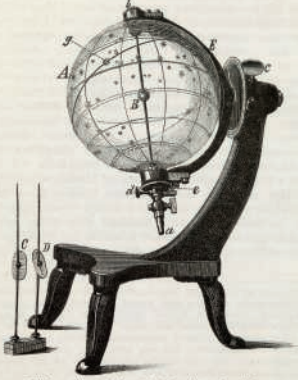


Bild 5. — Himmelsglob. af himlahvalfvets, & jordklotets.

Detail of the globe in accompanying text book

■ 12

## A "GRAND SOHLBERG" CELESTIAL GLOBE SWEDISH CIRCA 1880

The 9-inch diameter glass celestial sphere engraved on the outside with the lines of latitude and longitude and the tropic and polar circles, the equatorial graduated in degrees and hours, with applied steel ecliptic band, the interior with a central polar axis, at the centre a miniature terrestrial globe painted with lines of longitude and latitude and coloured continents, with brass mountings at either end, at the South Pole two knurled turning knobs, one for the earth with graduations in hours 1-12 and one for the sphere itself with graduations 1-24, held in a semi-circular gilt and black-painted iron mounting, swivelling on the horizontal axis to move an index against a vertically-mounted brass circle, graduated in  $0^{\circ}$ - $90^{\circ}$  in four quadrants, raised on an elegant curved iron arm, the black ground with gilt-painted foliate decoration, to a concave tripod base, with splayed cast-iron legs, with a brass plaque affixed SOHLBERG HIMMELSGLOB ÖLLERS & CNI STOCKHOLM 1 TILLVERKAD AF, housed in glazed pine case -- with K.H. Sohlberg, *Astronomi*, Stochholm 1881.

27 x 21 x 21in. (69 x 53 x 53cm.)

£10,000-15,000

\$14,000-20,000

€12,000-17,000

The first example of the fine and unusual celestial globe issued in Stockholm. Designed for academic and institutional use they were originally priced at 118 Kr (of which the government paid 20). The globe was designed to be half-filled with ink or litmus coloured water, to show the selected regions horizon; the water could be drained and replaced through the valves.







■ 13

**A 3-INCH REFRACTING TELESCOPE**

W WRAY, LATE 19TH CENTURY

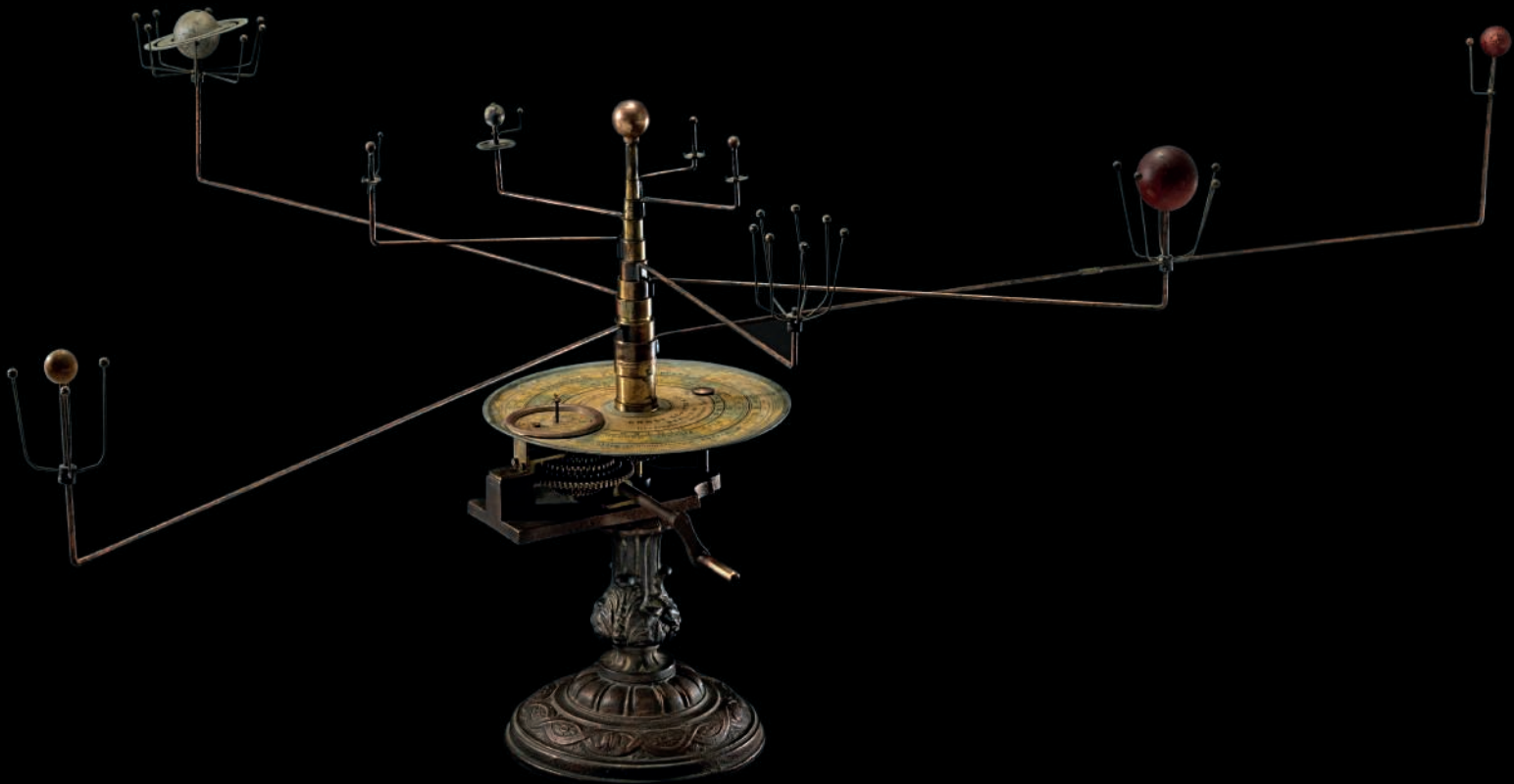
Signed on the end of the black enameled 41-inch body tube *WRAY LONDON*, case complete with accessories, large tripod stand. 73in. (185cm.) high

£2,000–3,000

\$2,700–4,000

€2,300–3,400





**14**

**A GERMAN PLANETARIUM**

ERNST SCHOTTE, CIRCA 1892

Signed on the dial ERNST SCHOTTE & Co. BERLIN, W Geographisch-artistische Anstalt. the geared mechanism working and crank handle actuating all the planetary arms, the nine arms supporting: Mercury; Venus; painted Earth and Moon; Mars with two satellites; eight asteroids; Jupiter with five satellites; Saturn with two rings and eight satellites; Uranus with four satellites and Neptune with one. The graduated paper horizon dial in white yellow and blue with calendrical and zodiacal scales with another inner calendrical dial with index pointer; on a cast bronze column and plinth of geometric and floral design. 41in. (110cm.) maximum diameter

£12,000-18,000

\$17,000-24,000

€14,000-20,000

A prolific manufacturer of globes and planetaria of various sizes and forms, Ernst Schotte & Co. were one of the major names in late nineteenth century German globe-making. Their planetary models designed for didactic use have also an elegant appearance. The number of satellites on each planet can help us date this orrery quite narrowly: Amalthea (Jupiter V) was discovered in 1892, and Phoebe (Saturn IX) in 1899.



~ 15

**A REGENCY ARMILLARY SPHERE**

MADE IN LONDON, CIRCA 1800

The 12-inch brass armillary sphere composed of ecliptic engraved with scales for calendar and zodiac, equator 0-360° and I-XXIV, rings labelled for *Arctic Circle*, *Tropic of Cancer*, *Tropic of Capricorn*, *Antarctic Circle*, two colures each engraved 0-90°-90°, at north celestial pole two dials rotate brass arms carrying a brass solar sphere and ivory lunar sphere, at the southern pole two dials rotate the entire armillary and central Earth axis with hour pointer to circle engraved on the inside 1-12-1-12, the 3-inch terrestrial comprised of twelve hand-coloured gores and two calottes, cartouche *A NEW Terrestrial GLOBE by J. Newton 1800*, supported in brass meridian engraved 0-90°-90°, with adjustable horizon ring 0-90°-90° and 8-point compass rose, the stand with adjustment arc 0-90° on tapering column with folding tripod feet.

25in. (63.5cm.) high

£40,000-60,000

\$54,000-81,000

€46,000-68,000

The armillary is in the style of that described by George Adams (1709-1772) in his *Astronomical and Geographical Essays* (London: 1766). If it were made by him, or his sons George (1750-1795) and Dudley (1762-1830) then one might expect the interior globe to carry the Adams name. A likely candidate for the maker of this instrument is the firm W. & S. Jones (1791-1859) who used globes by other London makers on their *New Portable Orrery*. Their catalogue of 1808 listing instruments "removed from their old shop, No. 135 [Holborn]" lists armillary spheres of 12-inch diameter for 13 guineas; but by 1812 when they reissue Adams' *Essays*, having bought the copyright to Adam's works from his widow, they no longer sell such instruments.







METEORITES (LOTS 16-32)



(Lot 24)





**\*16**

**A SIKHOTE ALIN METEORITE — AESTHETIC OTHERWORLDLY TOTEM-SCULPTURE**

*IRON, COARSE OCTAHEDRITE - IIAB*

*MARITIME TERRITORY, SIBERIA, RUSSIA*

Deep furrows, vibrant peaks, and *regmaglypts* (the thumbprint-like indentations produced during the meteorite's fiery plunge through the upper atmosphere) are much in evidence throughout. Two sockets astride a central ridge provide asymmetric balance to this totem-like form. The reverse features two deep scoops bisected by a thick ridge. Draped in a gunmetal patina.

3½ x 1¾ x 1½ in. (85 x 44 x 39mm.)

414g.

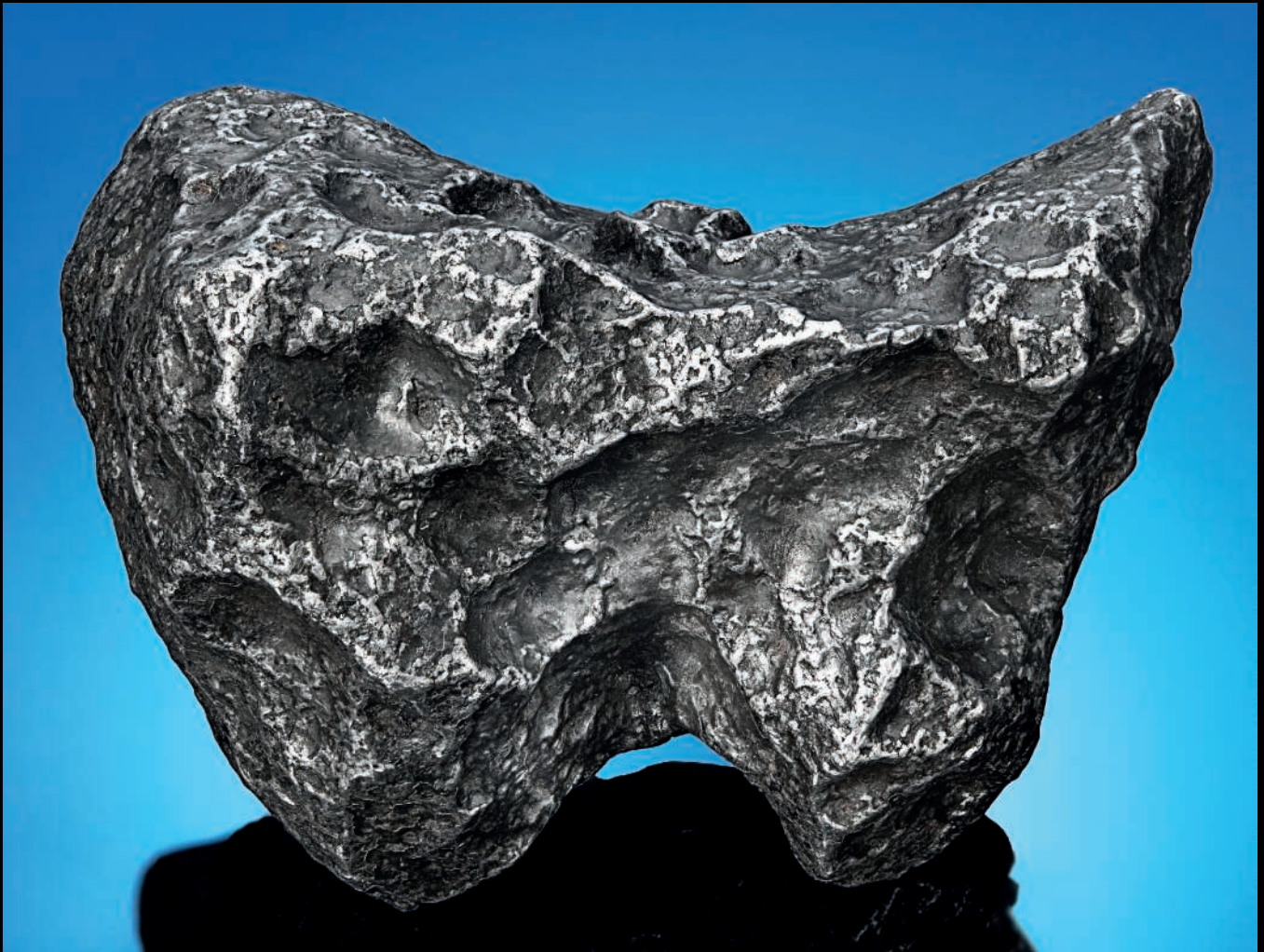
£1,500–2,500

\$2,100–3,400

€1,800–2,800

This engaging meteorite is from the biggest meteorite shower of the last several thousand years. Its journey began 320 million years ago, when a giant iron mass broke-off from its parent body in the asteroid belt and wandered through space until it encountered Earth on 12 February 1947. Upon slamming into the atmosphere it began to break apart and created a fireball brighter than the Sun as it sailed over the Sikhote-Alin Mountains in Siberia. The shockwaves from the low altitude explosion of the main mass collapsed chimneys, shattered windows and uprooted trees. A 33 kilometer long smoke trail persisted in the sky for several hours, and many of the resulting meteorites produced impact craters as large as 26 meters—with nearly 200 craters having been catalogued. A famous painting of the event by artist and eye-witness P. I. Medvedev was reproduced as a postage stamp issued by the Soviet government in 1957 to commemorate what many likened to what was seemingly the end of the world. There are two types of Sikhote-Alin meteorites: jagged and twisted shrapnel-like specimens (the result of the aforementioned low-altitude explosion of the main mass), and the more sought-after smooth, gently scalloped specimens that broke free at a much higher altitude and formed the aerodynamic thumb prints known as “regmaglypts”). This is an example of the latter variety, and is a superior example from the largest meteorite shower since the dawn of civilization.





**\*17**

**A CAMPO DEL CIELO – PALM-SIZED COMPLETE IRON METEORITE WITH FUSION CRUST**

*IRON, COARSE OCTAHEDRITE - IAB-MG*

*GRAN CHACO, ARGENTINA (27°28' S, 60°35' W)*

Palm-sized and surprisingly dense, this unusual trapezoid shaped meteorite exhibits the finely stippled surface characteristic of superior Campo del Cielo meteorites. Thumbprint-like sockets abound and within most are patches of fusion crust—a sought-after artifact of fractional heating when penetrating Earth's atmosphere.

2½ x 3½ x 1¼in. (59 x 88 x 47mm.)

826g

£1,000–1,500

\$1,400–2,000

€1,200–1,700

Campo del Cielo ("Valley of the Sky") meteorites are the result of a cataclysmic collision between two asteroids that were flying at a cosmic velocity in interplanetary space. At least one of the asteroids completely shattered resulting in large fragments. When one such fragment later struck Earth's upper atmosphere 6,000 years ago, the result was further explosive fragmentation into thousands of meteorites. The larger meteorites struck the ground at such a high velocity that an array of at least 26 impact craters formed, the largest measuring a football field in diameter. This meteorite was once part of the iron core of an asteroid between Jupiter and Mars.





**\*18**

**A CAMPO DEL CIELO METEORITE – A QUINTESSENTIAL LARGE IRON METEORITE**

*IRON, COARSE OCTAHEDRITE - IAB-MG*

*GRAN CHACO, ARGENTINA*

The smooth, highly textured surface is blanketed in a charcoal patina with chrome accents. The form evocative of the asteroid, from which it originated, the meteorite's entire surface is blanketed with sought-after *regmaglypts* (the scalloping that occurred as this mass penetrated Earth's atmosphere and underwent surficial melting). While the front of the meteorite undulates the reverse is largely flat, which indicates that this meteorite cleaved along a crystalline plane. This meteorite stands in a variety of orientations and exhibits the archetypal soft ridges and finely stippled texture of superior Campo del Cielo meteorites.

8 x 11½ x 4¾ in. (205 x 291 x 117mm.)

24.8kg.

£7,000–10,000

\$9,400–13,000

€8,000–11,000

Similar to the previous lot, Campo del Cielo meteorites were first described by Spanish explorers in 1576, nearly 6,000 years after their collision with Earth and far before their unearthly origins were understood. A Campo was the first large meteorite ever displayed at the *British Museum of Natural History*, and Campo del Cielo ("Valley of the Sky") masses are today found in the finest museums in the world. Fortuitously, a previously unknown portion of the Campo *strewn field* (the area in which a meteorite shower is "strewn" across the Earth's surface) was discovered. Located at a higher elevation than the valley where the majority of Campos fell, the meteorites recovered from this region were less susceptible to incursions of ground water and, as a result, exhibit far better preservation—as is evidenced in the current example. All iron meteorites originate from what was the molten iron core of an asteroid between Mars and Jupiter that shattered apart billions of years ago following an impact with another asteroid. Decorative and robust, this is the quintessence of a choice Campo del Cielo meteorite.





**\*19**

**A COMPLETE SLICE OF DAR EL KAHAL—EXQUISITE MATRIX OF STONE METEORITE REVEALED**

*H5-6*

*GAO, MALI*

This polished complete slice reveals a variegated matrix whose hues range from walnut to cinnamon, with a veritable galaxy-like flecking of iron-nickel to outstanding effect. Modern cutting.

7¾ x 5 x ½in. (197 x 127 x 3mm.)

291g

£1,000–1,500

\$1,400–2,000

€1,200–1,700

Having fallen to Earth hundreds of years ago, the first Dar el Kahal meteorite was found in 2012 by a nomad searching for artifacts in northern Mali. Following this discovery a systematic gridding of the area ensued and additional masses were recovered. Dar El Kahal is a meteorite *breccia* (a rock composed of smaller fragments fused together). It is comprised of very metamorphosed, highly recrystallized type-6 chondritic material and somewhat less-metamorphosed, moderately recrystallized type-5 fragments. The rock from which this meteorite originated was shocked by an impact event, shattered and heated on its parent asteroid long before it was launched on its journey toward Earth. The variations of tonality now seen reveal the brecciation and is in part due to the selective tinting which occurs as a result of the meteorite remaining on the desert floor exposed to the elements for centuries. This is a splendid cross section of a meteorite breccia.



**\*20**

**A SEYMCHAN METEORITE SPHERE — AN EXTRATERRESTRIAL CRYSTAL BALL**

*PALLASITE - PMG BRMAGADAN DISTRICT, RUSSIA*

This specimen originates from a large Seymchan meteorite sample that underwent a number of stages of cutting and then grinding and polishing in a sphere-making apparatus. Dazzling amber-hued olivine crystals are distributed throughout a highly-polished iron-nickel matrix.

1 7/8 in. (48mm.) diameter

294g.

£5,000–8,000

\$6,800–11,000

€5,700–9,100

Less than 0.2% of all meteorites are pallasites, the most beautiful extraterrestrial substance known, and the following three lots represent different presentations: a sphere, a sectional end piece and a complete slice. All pallasites are formed at the core-mantle boundary of an asteroid that underwent mixing of molten metal from the core with olivine from the mantle. The result is olivine crystals in suspension in an iron-nickel matrix. Many, including the following three examples, also contain gem-quality olivine referred to as *peridot* (birthstone of August).

Seymchan meteorites are found in the Magadan district of Siberia—the location of Stalin’s infamous gulags. The first two masses were found in a streambed by geologists in the 1960s. Most Seymchan meteorites are non-descript, prosaic masses until they are cut to reveal their internal splendor. To make a sphere of this size requires a mass nearly three times that of the sphere, as large amounts of material are lost during the grinding and polishing processes. With crystals of olivine suspended in its nickel iron matrix, this

is a select example of the most dazzling of all meteorites and can rightfully be considered an otherworldly crystal ball.





**\*21**

**EXTRATERRESTRIAL PERIDOT IN A SECTION OF AN ADMIRE METEORITE**

*PALLASITE – PMG*

*LYON COUNTY, KANSAS*

Extraterrestrial crystals of olivine and peridot are seen suspended in the two cut and polished perpendicular surfaces of this softly-triangular wedge-shaped section of an Admire meteorite. The reverse reveals the meteorite's cocoa-hued textured exterior. Modern cutting.

3¼ x 1½ x 1¼in. (96 x 39 x 33mm.)

294g

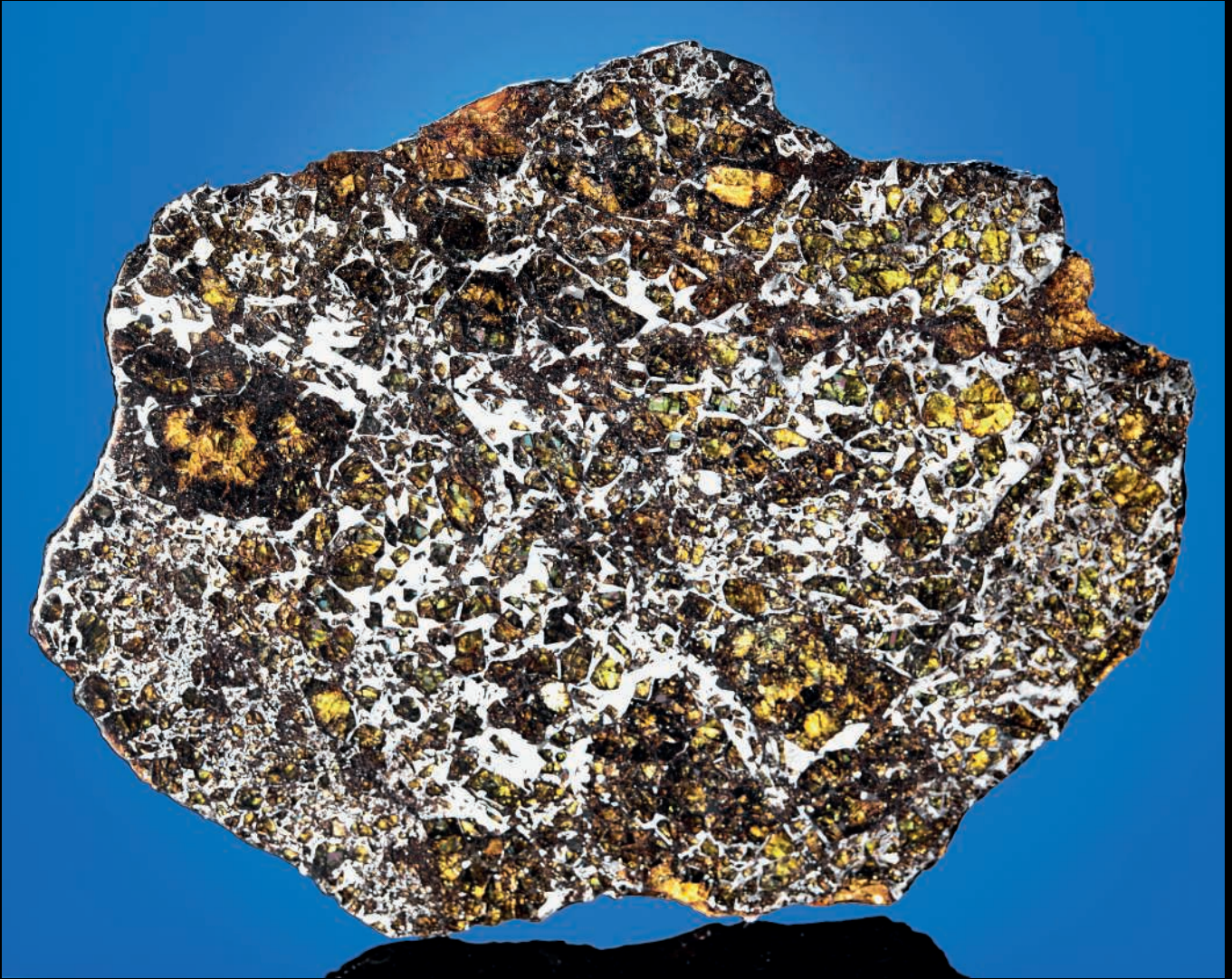
£2,000–3,000

\$2,700–4,000

€2,300–3,400

As the previous lot, Admire is also a member of the pallasite group of meteorites, widely considered to be the most beautiful otherworldly substance known. All of the world's known meteorites weigh less than the world's *annual* output of gold—and pallasites are rarer still as they represent less than 0.2% of all meteorites. Pallasites formed at the mantle-core boundary of an asteroid when stony olivine (a magnesium-rich silicate) settled atop the edge of the asteroid's molten iron core and became suspended in the metallic matrix. Originating from the asteroid belt, the first two masses of Admire were ploughed up by a farmer in Lyon County, Illinois in 1881.

Gem-quality olivine—the gemstone *peridot* (birthstone of August)—is present in this specimen. The olivine grains in Admire are somewhat rounded and angular, indicating recrystallization following an impact event in interplanetary space.



**\*22**

**A COMPLETE SLICE OF ADMIRE METEORITE**

*PALLASITE – PMG*

*LYON COUNTY, KANSAS*

Extraterrestrial crystals of olivine and green peridot are suspended in a iron-nickel matrix of this polished complete slice. A thin band of the meteorite's external surface is seen in the rim of this alluring specimen. Modern cutting.

8½ x 11 x ¾ in. (216 x 293 x 3mm.)

846g.

£6,000–9,000

\$8,100–12,000

€6,900–10,000

Admire is a member of the pallasite group of meteorites, widely considered to be the most beautiful otherworldly substance known. Meteorites are among the rarest substances on Earth. All the world's meteorites weigh less than the world's *annual* output of gold, and pallasites are more rare still as they represent less than 0.2% of all known meteorites. Pallasites formed at the mantle-core boundary of an asteroid when chunks of stony olivine (a magnesium-rich silicate) settled atop the edge of the asteroid's molten iron core and became suspended in the metallic matrix. Gem-quality olivine also known as the gemstone *peridot* (birthstone of August) is present in this specimen. Admire pallasites are readily identified by large polycrystalline areas that cleaved into highly angular shards. Some olivine grains in Admire are also somewhat rounded, indicating recrystallization following an impact event in interplanetary space. Originating from the asteroid belt, the first two masses of Admire were ploughed up by a farmer in Lyon County, Illinois in 1881. More than a century later, enterprising meteorite hunters returned to the site, and after a lot more plowing (following the use of a metal detector) they discovered several additional masses.





23

**\*23**

**A DRONINOMETEORITE — MINIMALIST SCULPTURAL FORM FROM OUTER SPACE**

*IRON, ATAXITE (UNGROUPED) BRRYAZAN DISTRICT, RUSSIA*

A richly channeled surface texture from terrestrialization and a unique chemical composition are indicative of Dronino meteorites. The deep furrow seen on the reverse surface is seemingly embossed with a fluted texture. The entire meteorite is wrapped in a patina of pewter to platinum tones with chrome highlights. Hewn by forces both on and off Earth, this is a fine example of an intriguing meteorite.

3½ x 4½ x 2½in. (92 x 119 x 63mm.)  
1.9kg.

£1,200–1,800

\$1,700–2,400  
€1,400–2,000

Dronino meteorites were first found in the Ryazan district of Russia in 2000 by a mushroom hunter. The region has been inhabited for about a millennium, and as there are no reports of a large meteorite impact it can be confidently inferred that the mass must have fallen more than a thousand years ago when the area was uninhabited. This age is consistent with the high degree of terrestrialization in evidence—not only had the meteorite’s shape changed as a result of its exposure to Earth’s elements, but superior specimens—including the meteorite now offered—acquired a highly crenelated texture that is unique to Dronino specimens. Less than 2% of all meteorites are of the iron variety, and 90% of those are members of distinct chemical groups that hail from about a dozen different asteroids. 10%, however, are chemically unrelated; they come from unknown parent bodies and are referred to as “ungrouped” irons. Dronino is one of these unusual, ungrouped irons—a sought-after designation for both the scientific and collecting communities. Given the unique chemical make-up of Dronino meteorites, one would expect that after interacting with Earth’s geochemistry for 1000 years there would be intriguing results. Dronino certainly delivers.

**\*24**

**A GIBEON METEORITE — NATURAL SCULPTURE FROM OUTER SPACE**

*IRON, FINE OCTAHEDRITE BRGIBEON, GREAT NAMA LAND, NAMIBIA*

Draped in a milk chocolate patina with variegated ochre accents, two metallic flanges radiate from a triangular base. A profusion of scoops, ridges and crests enhance this meteorite’s character. The finely textured reverse is uncommonly flat, evidencing this meteorite having naturally split apart along a crystalline plane. Surprisingly dense and engagingly shaped, this meteorite stands in a variety of orientations.

9½ x 9 x 5¼in. (239 x 231 x 147mm.)  
13.8kg.

£15,000–25,000

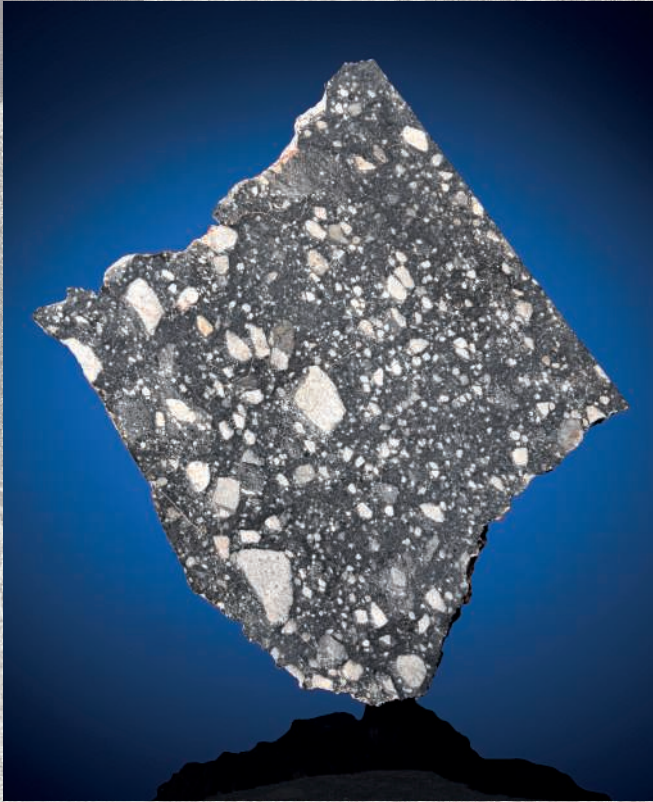
\$21,000–34,000  
€18,000–28,000

Gibeon meteorites originated 4½ billion years ago from the core of a planetary-like body located between Mars and Jupiter whose shattered remains are part of the asteroid belt. An impact event ejected what was to become the Gibeon mass into interplanetary space, and Gibeon meteorites are the bounty that occurred thousands of years ago when the wandering iron mass slammed into Earth’s atmosphere before exploding and raining down in what is now the Kalahari Desert in Namibia. In previous generations, indigenous tribesmen recovered the smallest meteorite shards and fashioned them into spear points and other tools. The final shape of this specimen is the product of a fortuitous combination of variables including its composition, the soil chemistry, its orientation in the ground and the amount of groundwater to which it was exposed—all of which slowly reshaped this mass as it sat near the Earth’s surface as the seasons turned over thousands of years. In effect, this meteorite was hewn by monumental forces encountered in space, superheating upon entering Earth’s atmosphere and the effects of Earth’s elements. While the vast majority of iron meteorites are prosaically shaped, that is not the case as it regards this engaging 4½ billion year old otherworldly form, a tabletop sculpture from outer space.

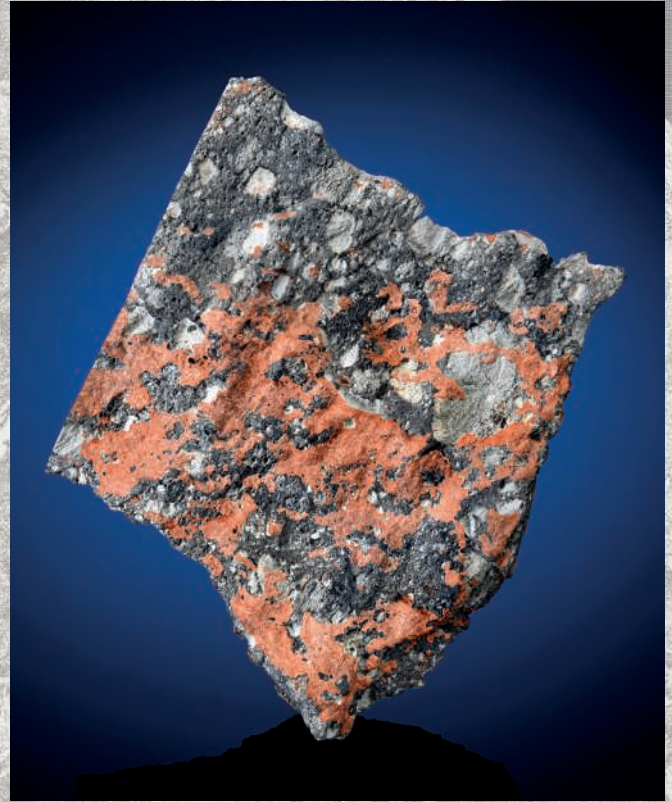








(Front)



(Back)

**\*25**

**AN END PIECE OF A METEORITE FROM THE MOON – THE INTERIOR AND EXTERIOR OF NWA 10309 REVEALED**

*MOON ROCK – FELDSPATHIC REGOLITHIC BRECCIA*

*SAHARA DESERT, NORTH WEST AFRICA*

This sample of a Moon rock is termed a feldspathic regolithic lunar breccia – a rock formed at the lunar surface and composed of different fragments of rocks and minerals cemented together by lunar soil and other crushed rock. The cut face of this diamond-shaped surface evidences a galaxy of inclusions, the result of the ongoing bombardment of the Moon’s surface by meteorite impacts prior to the collision responsible for launching this rock to Earth. The beveled reverse reveals the meteorite’s exterior surface including patches of red from the Sahara aesthetically interspersed between the dark regolith and bright white anorthite. As one would expect, many of the Apollo mission samples returned to Earth are nearly identical to lunar meteorites, and such is the case with this specimen.

4 x 4¼ x ½ in. (101 x 109 x 12mm.)

80g.

£15,000–20,000

\$21,000–27,000

€18,000–23,000

This end piece is of a Moon rock that landed on Earth after ejection from the lunar surface following an asteroid impact. There are only 275 kilograms (600 pounds) of lunar meteorites known to exist—with a significant fraction held in institutional collections—and they would all fit in two large suitcases. Lunar meteorites are identified by specific mineralogical, chemical, textural and radiation signatures. The Moon is among the rarest substances on Earth. Many common minerals found on Earth’s surface are rare on the Moon and some lunar minerals are unknown on Earth. In addition, Moon rocks contain gases captured from the solar wind with isotope ratios that are very different from the same gases found on Earth. While Apollo astronauts returned with less than 400 kg of Moon rocks, not one milligram is available to collectors.

North West Africa (NWA) 10309—the 10,309th meteorite to be recovered and classified from the North West African grid of the Sahara Desert—was discovered in 2015. The meteorite from which this sample originated was classified by one of the world’s foremost classifier’s of planetary material, and his work was vetted by a panel of scientists on the Meteoritical Society’s Nomenclature Committee prior to being assigned a name and published in the *Meteoritical Bulletin*. As described by the classifier, Dr. Anthony Irving, this is a feldspathic breccia composed of anorthite, pigeonite orthopyroxene and augite in a fine-grained matrix containing kamacite, trolite and taenite—the latter group providing incontrovertible evidence, the smoking gun, of an iron asteroid impact on the lunar surface, and possibly the very asteroid that ejected this material off the Moon into interplanetary space.



**26**

**SIKHOTE ALIN METEORITE – SCULPTURE FROM OUTER SPACE**

*IRON, COARSEST OCTAHEDRITE - IIAB*

*MARITIME TERRITORY, SIBERIA, RUSSIA*

This deceptively massive, asymmetric body evocative of movement is the quintessence of an iron meteorite. Deep furrows, vibrant peaks, and regmaglypts (the thumbprint-like indentations produced during the meteorite's fiery plunge through the upper atmosphere) are much in evidence. Draped in a gunmetal patina. This meteorite is testament to the monumental forces exerted on an object while punching through Earth's atmosphere, and is a compellingly aesthetic example from the greatest meteorite shower in modern times.

6 x 4 ½ x 4in. (152 x 117 x 100mm.)

1.86kg.

£7,000–10,000

\$9,400–13,000

€8,000–11,000

This is a distinguished meteorite from the Sikhote-Alin event—the largest meteorite shower of the last several thousand years. Its journey began 320 million years ago, when a giant iron mass broke-off from its parent body in the asteroid belt and wandered through interplanetary space until it encountered Earth on 12 February 1947. When it slammed into the atmosphere it began to break apart, and then created a fireball brighter than the Sun as it sailed over the Sikhote-Alin Mountains in eastern Siberia. The shockwaves from the low altitude explosion of the main mass collapsed chimneys, shattered windows and uprooted trees. A 33 kilometer long smoke trail in the sky persisted for several hours, and many of the resulting meteorites produced impact craters as large as 26 meters—with nearly 200 craters having been catalogued. A famous painting of the event by artist and eye-witness P. I. Medvedev was reproduced as a postage stamp issued by the Soviet government in 1957 to commemorate the tenth anniversary of an event that observers likened to what was seemingly the end of the world. This is a fine example of an historic event, the largest meteorite shower of the modern era.





27

**END PIECE OF A LARGE SEYMCHAN METEORITE WITH INTERIOR AND EXTERIOR REVEALED**

*PALLASITE - PMG*

*MAGADAN DISTRICT, RUSSIA (62°54' N, 152°26' E)*

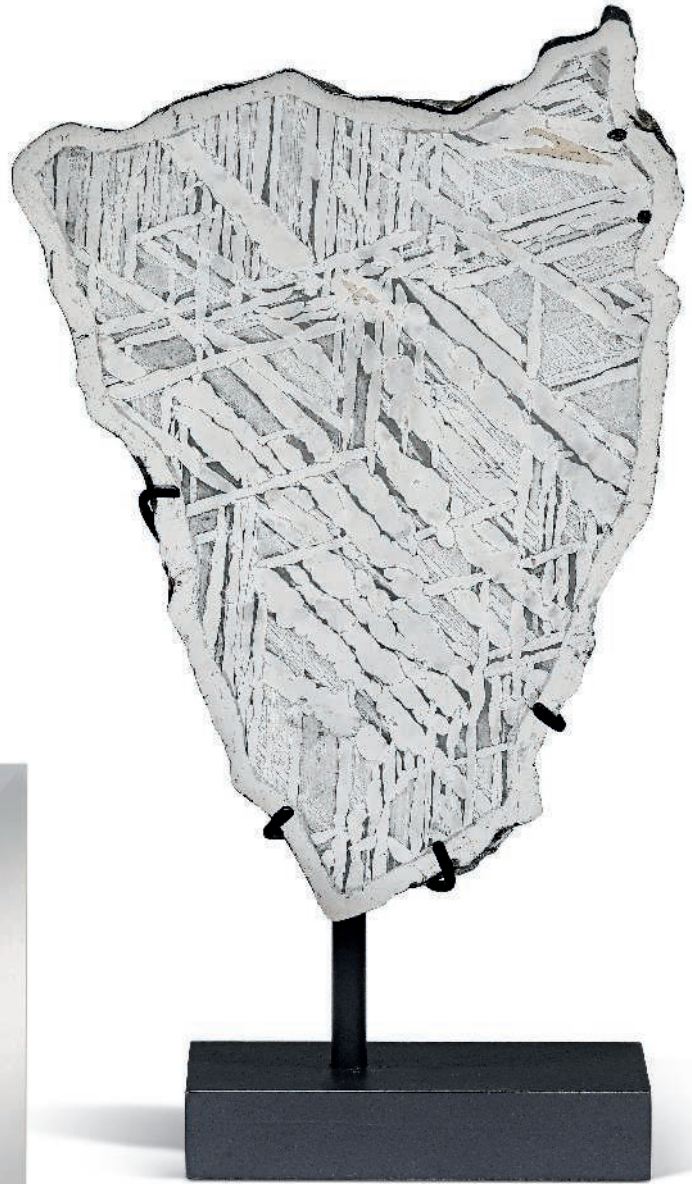
The front face cut and etched to reveal beauty of the internal Widmanstätten pattern, the external surface on the reverse is smooth and rounded, the result of exposure to Earth's elements during its long tenure on our planet. An intriguing study of the interior structure and exterior surface of an iron meteorite.

6¼ x 4½ x 1in. (160 x 115 x 25mm.)

£2,000-3,000

\$2,700-4,000

€2,300-3,400



27



28

28

**A "LEVITATING" METEORITE SLICE**

The thin slice of Seymchan meteorite suggesting the appearance its parent body floating in space, it is drilled and secured in place with wire and pulled upwards by a magnet. Housed in Perspex box.

11 x 8 x 8 in. (28 x 20.3 x 20.3 cm.)

£2,000-3,000

\$2,700-4,000

€2,300-3,400





29

**29**

**MOUNT DOOLING METEORITE SLICE – EXOTIC AUSTRALIAN IRON METEORITE WITH ABSTRACT MATRIX**

*IRON METEORITE – 1C*

*NORTH YILGARN, WESTERN AUSTRALIA*

In this near triangular complete slice, large metallic grains of kamacite and taenite appear interwoven in a complex array specific to the 1C chemical group, the smallest group of iron meteorites. The meteorite is circumscribed by the winding edge of the meteorite's exterior surface. Neumann bands and large silicate inclusions are in evidence in this select example. Modern cutting.

9 x 7½ x ¼in. (230 x 191 x 4mm.)  
520g.

£2,500–3,500

\$3,400–4,700  
€2,900–4,000

**30**

**A TRANSITIONAL SLICE OF SEYMCHAN METEORITE**

*PALLASITE – PMG*

*MAGADAN DISTRICT, RUSSIA (62°54' N, 152°26' E)*

A highly aesthetic long thin Seymchan transitional pallasite slice and a notable example of the textural heterogeneity of the Seymchan meteorite. The metal-rich areas display a prominent Widmanstätten pattern and represent the olivine-free region at the top of the iron-nickel core. The olivine-rich aggregates were derived from a fragmented olivine layer at the bottom of the mantle that was invaded by a metallic liquid during mixing at the core-mantle boundary; supported on fitted stand  
10½ x 3in. (272 x 65mm.)  
440g.

£3,000–5,000

\$4,100–6,700  
€3,500–5,700

Seymchan is an unusual and remarkable pallasite; large portions of the rock are olivine free. Pallasites are formed at the core-mantle boundary of an asteroid that experienced melting: molten metal from the core mixed with olivine crystals settling downwards from the mantle.



30

31





**31**

**LARGE PARTIAL SLICE OF ESQUEL PALLASITE — EXTRATERRESTRIAL GEMS**

*PALLASITE - PAL*

*CHUBUT, ARGENTINA*

One long curve of the meteorite's exterior surface along with two cut edges delimit this partial slice. Crystals of olivine and peridot richly abound and appear suspended in the metallic matrix. One side of the specimen reveals the natural crystalline habit of the two iron-nickel alloys comprising the matrix—a signature pattern that is diagnostic in the identification of a meteorite—the opposite side has been polished to a mirror finish. Supported on custom stand. Modern cutting. 10 x 9 x ¼in. (255 x 238 x 5mm). 893g.

£25,000–35,000

\$34,000–47,000

€29,000–40,000

Pallasites are the most dazzling extraterrestrial substance known, and Esquel is among the most coveted. Esquel's crystals were not heavily shocked, and as a result, its highly translucent olivine crystals range in hue from amber to forest-green. This specimen also contains gem-quality olivine or *peridot* (birthstone of August); relatedly Esquel was the first pallasite material to be utilized in modern jewelry applications. Pallasites formed at the core-mantle boundary of an asteroid after stony olivine (a magnesium-rich silicate mineral) settled atop the asteroid's molten metal core. As a result of their sheer beauty, pallasites are the most sought after of all meteorite types. Named after 18th Century scientist Peter Pallas (an honor Pallas is fortunate to have received, as he never accepted the fact that the strange boulder he found originated in outer space), pallasites are exceedingly rare, comprising less than 1% of all known meteorites. This superlative complete slice showcases a sparkling mosaic of crystalline olivine and peridot in an iron-nickel matrix



**\* 32**

**A THICK PARTIAL SLICE OF BRENHAM METEORITE**

STONY IRON—PAL

KIOWA COUNTY, KANSAS

Encompassing an aggregate of extraterrestrial olivine and peridot, this meteorite has been cut to reveal three faces studded with crystals, the edge is dappled in a rich patina with mango accents.

6 x 6 x 5in. (15 x 15 x 13cm.)

12kg.

£20,000–30,000

\$27,000–40,000

€23,000–34,000

While there is uncertainty regarding whether any Native Americans witnessed the Brenham meteorite shower, petroglyphs have been found nearby depicting what could have been the Brenham event. The presence of Brenham meteorites in numerous burial mounds as far away as Ohio — including jewelry fashioned out of Brenham meteorites — indicates that Native Americans, like modern collectors, were transfixed by the beautiful extraterrestrial stones.

It was in the late 19th Century that wide attention first came to these curious-looking stones. Eliza Kimberly, a homesteader, believed the rocks scattered across her property were meteorites and she collected them. Her suspicions were confirmed in 1890 when scientists affirmed the meteoritic origin of several masses, and the area was dubbed "The Kansas Meteorite Farm."

Forensic sleuthing was required to locate this matchless specimen. In 1929, after having recovered multiple specimens, the "Father of Meteoritics," Dr. H. H. Ninger plotted what he believed to be the Brenham meteorite strew field (the elliptical area in which the pieces of the Brenham meteorite are strewn across Earth's surface).





GOGOTTES (LOTS 33-40)





■ 33

**A GOGOTTE FORMATION**  
FONTAINEBLEAU, FRANCE

Of natural form with a curve of compact concretions sweeping along one side, from the Oligocene (circa 30 million years ago), supported on stand.

20in. (50.5cm.) high

£4,000–6,000

\$5,400–8,100  
€4,600–6,800

Sandstone concretions formed in mineral rich waters 30 million years ago, gogottes are much prized for their sculptural-like appearance.







**34**

**A GOGOTTE FORMATION**  
FONTAINEBLEAU, FRANCE

Of natural sweeping form, from the Oligocene (circa 30 million years ago). Supported on custom stand.

16in. (41m.) high on stand

£5,000–8,000

\$6,800–11,000

€5,700–9,100

■ 35

**A GOGOTTE FORMATION**  
FONTAINEBLEAU, FRANCE

Of natural form, from the Oligocene (circa 30 million years ago), supported on two pillared stand. 17in. (43.5cm.) high on stand

£10,000–15,000

\$14,000–20,000  
€12,000–17,000







■ 36

**A GOGOTTE FORMATION WITH  
NATURAL HOLE**  
FONTAINEBLEAU, FRANCE

Of natural form, from the Oligocene (circa 30 million years ago), supported on steel stand.  
23½ in. (60 cm.) high

£15,000-25,000

\$21,000-34,000

€18,000-28,000

37

**A GOGOTTE FORMATION**  
FONTAINEBLEAU, FRANCE

Of natural form, from the Oligocene (circa 30 million years ago), supported on wooden stand.  
16in. (42cm.) high

£3,000–5,000

\$4,100–6,700  
€3,500–5,700







■ 38

**A SMALL GOGOTTE FORMATION**  
FONTAINEBLEAU, FRANCE

Of natural form, from the Oligocene (circa 30 million years ago), supported on custom stand.  
13¼in. (34cm.) high on stand.

£2,000–3,000

\$2,700–4,000  
€2,300–3,400



39

■ 39

**A GOGOTTE FORMATION**  
FONTAINEBLEAU, FRANCE

Of natural form, from the Oligocene (circa 30 million years ago), supported on stand 11in. (28.5cm.) high on stand

£4,000–6,000

\$5,400–8,100

€4,600–6,800

■ 40

**A GOGOTTE FORMATION**  
FONTAINEBLEAU, FRANCE

Of natural intact form with a large concentric concretion sitting freely on, from the Oligocene (circa 30 million years ago) 9 x 12 x 10in. (23 x 31 x 26cm.)

£3,000–5,000

\$4,100–6,700

€3,500–5,700



40



■ 41

**A COLLECTION OF ANCIENT MARBLE SPECIMENS**

PROBABLY ASSEMBLED IN THE 19TH CENTURY

378 polished rectangular specimens with manuscript labels, *Breccia Quintilina*, *Giallo Tigrato*, *Breccia Policroma*, *Breccia Dorata*, *Breccia Frutticolosa*, amongst others. The 2x4-inch specimens arranged in eight drawers of 42 and two of 21, housed in a 20th century pine collectors cabinet. 38½ x 20 x 16½in. (98 x 51 x 42.5cm.)

£20,000–30,000

\$27,000–40,000

€23,000–34,000

**PROVENANCE:**

Sold by Gregory Botley & Co, March 1955, for £100  
Thence by descent

**LITERATURE:**

Many illustrated in H.W Pullen, trans. F.P. Crocenzi, *Manuale dei Marmi Romani Antichi*, Rome 2015

The Grand Tour saw many English collectors return home with specimens of Roman and decorative marbles, sometimes cut from columns found in the Tiber, and regularly they were fashioned into fine pietra dura tabletops. Very rarely they were kept as mineralogical collections -- a famous example being the Corsi collection in Oxford. Not only are these collections useful identification guides for scholars, but also they are important survivals since some of the quarries that produced these decorative stones in Antiquity are now lost.

For a full listing of the marble specimens present please contact the department.





MINERALS (LOTS 41-80)







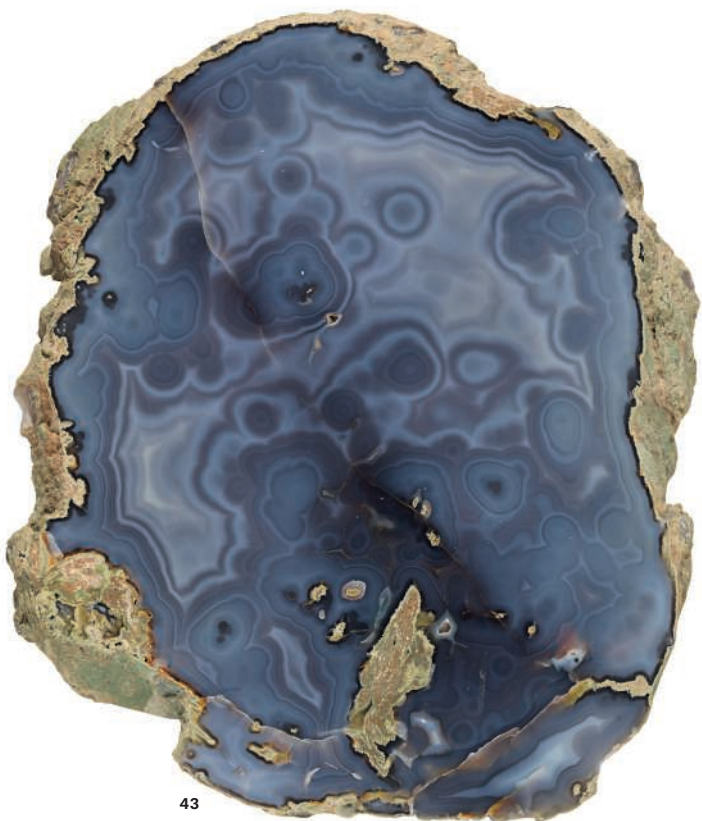
42

**42**  
**TWO AGATE GEODES**  
 BRAZIL

From Paraiba, each with cut and polished triangular face, supported on stands.  
 18in. (46cm.) high

£3,000–5,000

\$4,100–6,700  
 €3,500–5,700



43

■ **43**  
**A LARGE AGATE SLICE**  
 BRAZIL

The thick cut slice polished to reveal deep blue colours.  
 A fine example.  
 22in. (56cm.) wide

£3,000–5,000

\$4,100–6,700  
 €3,500–5,700

■ 44

**A LARGE DESERT CONCRETION**  
MOROCCO

Of tall monolithic form, on stone base.  
85 in. (216 cm.) high

£12,000–18,000

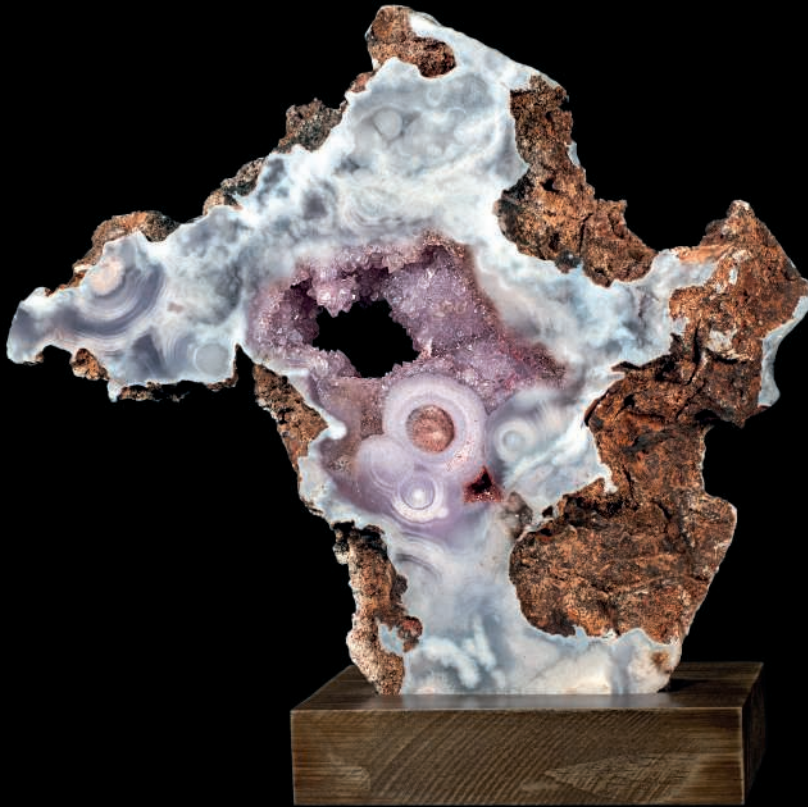
\$17,000–24,000

€14,000–20,000

Once thought to be a stromatolite (a very primitive life form), these concretions are now considered abiotic formations from the Precambrian (circa 600 million years ago).







45

**45**  
**A SLICE OF PINK AMETHYST**  
BRAZIL

Cut and polished to both sides, on oak stand.  
11in. (28cm.) high

£2,000–3,000

\$2,700–4,000  
€2,300–3,400

**46**  
**A LARGE QUARTZ BOWL**  
BRAZIL

Cut from one piece and polished.  
21in. (53cm.) wide

£2,000–3,000

\$2,700–4,000  
€2,300–3,400



46



47

■ 47  
**A SPECIMEN OF AMETHYST**  
 BRAZIL

The freeform cut and polished from a geode,  
 freestanding.

17in. (43cm.) high

£5,000–8,000

\$6,800–11,000  
 €5,700–9,100

■ 48  
**TWO SLICES OF AN AMETHYST GEODE**  
 BRAZIL

The sequential slices cut thickly and mounted on  
 stands.

27 in. (69 cm.) high

£4,000–6,000

(2)

\$5,400–8,100  
 €4,600–6,800



48

47





■ 49

**A MASSIVE SEPTARIAN SLICE**

RUSSIA

The thick cut slice of a septarian concretion with veins of dark orange calcite.  
54 x 43 x 2in. (137 x 109 x 5cm.)

£30,000-50,000

\$41,000-67,000

€35,000-57,000

■ 50

**A LARGE PYRITE CLUSTER**

PERU

Of natural form with large lustrous crystals.  
11 x 12 x 9 in. (28 x 31 x 23 cm.)

£10,000–15,000

\$14,000–20,000  
€12,000–17,000



50

■ 51

**A LARGE SELENITE CLUSTER**

MEXICO

Of natural form.  
19½ x 2 in. (49.5 x 61cm.)

£3,000–5,000

\$4,100–6,700  
€3,500–5,700



51





■ 52

**A SPLIT AMETHYST GEODE PAIR**

BRAZIL

From Rio Grande du Sol, of hollow concave wing-like form.  
38in. (97 cm.) high

£10,000–15,000

\$14,000–20,000  
€12,000–17,000

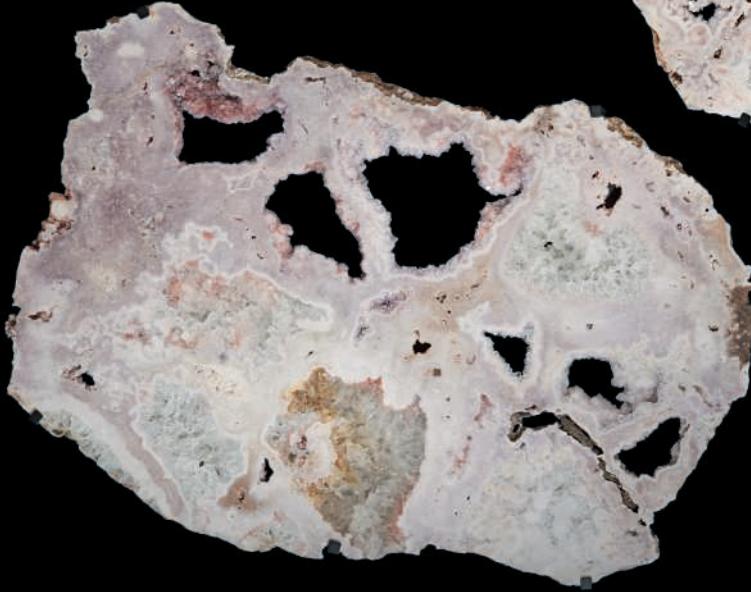
■ 53

**TWO SLICES OF ROSE QUARTZ**  
BRAZIL

The slices cut and polished, with natural cavities creating an appearance reminiscent of dinosaur skulls, each mounted for framing.  
39 x 28 $\frac{3}{8}$  x  $\frac{3}{4}$  in. (99 x 72 x 2 cm.)

£5,000–8,000

\$6,800–11,000  
€5,700–9,100



■ 54

**A LARGE AMETHYST CRYSTAL**  
BRAZIL

From Bahia, of natural form, supported on custom stand.  
19 $\frac{1}{2}$  in. (49.5cm.) high

£2,000–3,000

\$2,700–4,000  
€2,300–3,400





■ 55

**A CUT GEODE WITH STALACTITES**

BRAZIL

Cut and polished, some stalactites with natural ends some cut to reveal internal growth pattern, the yellow-orange colour from heat-treatment. 27in. (69cm.) high

£4,000-6,000

\$5,400-8,100

€4,600-6,800



■ 56

**A SPECIMEN OF FLUORITE AND PYRITE**  
MOROCCO

Of natural form, on custom stand.  
23in. (58.5cm.) high

£3,000-5,000

\$4,100-6,700  
€3,500-5,700



56



57

■ 57

**A SPECIMEN OF CRYSTALLINE SULPHUR**  
BOLIVIA

The small crystals with strong yellow colour.  
10in. (26cm.) high

£1,500-2,500

\$2,100-3,400  
€1,800-2,800





58

**58**  
**A SLICE OF FLINT**  
 POLAND

Cut and polished to reveal internal abstracted layerings, supported on custom stand.  
 10in. (26cm.) high

£2,000–3,000

\$2,700–4,000  
 €2,300–3,400

■ **59**  
**A LARGE QUARTZ POINT**  
 BRAZIL

With natural termination point.  
 28in. (71cm.) high

£5,000–8,000

\$6,800–11,000  
 €5,700–9,100



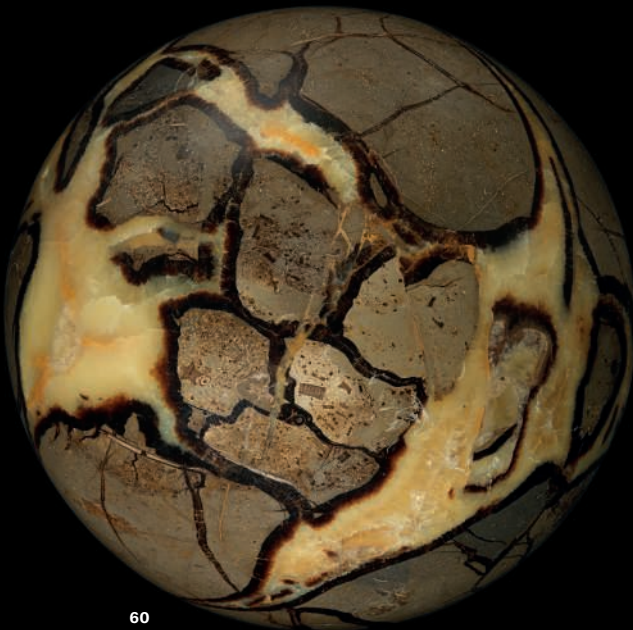
59

**60**  
**A SEPTARIAN BOWL**  
 MADAGASCAR

The concretion nodule cut and polished to spherical form.  
 9in. (23cm.) diameter

£3,000–5,000

\$4,100–6,700  
 €3,500–5,700



60

**61**

**A SPECIMEN OF MARCASITE ON QUARTZ**  
BULGARIA

The fine grained marcasite overgrown on one side of quartz crystals, the specimen with wall mounting.  
15 x 9 in. (38.1 x 22.9 cm.)

£5,000–8,000

\$6,800–11,000  
€5,700–9,100



61

**62**

**AN ANCIENT SEABED CONCRETION**  
CHINA

The two nodules with fine crystals of marcasite, in original matrix.  
4 1/2 in. (105.4 cm.) wide

£7,000–10,000

\$9,400–13,000  
€8,000–11,000



62





63

■ 63

**A LARGE SPECIMEN OF OBSIDIAN**  
MEXICO

The specimen cut and polished to sculptural form, on base.  
25 in. (63.5 cm.) wide

£3,000–5,000

■ 64

**A QUARTZ CLUSTER**  
ARKANSAS

The crystals with deep black colour from treatment.  
11 x 18 x 10 in. (28 x 45.5 x 25.5 cm.)

\$4,100–6,700  
€3,500–5,700

£10,000–15,000

\$14,000–20,000  
€12,000–17,000



64

■ 65

**A CLUSTER OF PYRITE AND SPHALERITE  
WITH QUARTZ**

PERU

Of natural form.  
16in. (40.5cm.) wide

£3,000–5,000

\$4,100–6,700  
€3,500–5,700



65



66

LOT 66 SOLD WITH NO RESERVE

■ • 66

**A SPECIMEN OF DESERT ROSE**  
MOROCCO

Of natural form.  
10 x 12 x 10 in. (25.4 x 30.5 x 25.4 cm.)

£1,000–1,500

\$1,400–2,000  
€1,200–1,700

67

**A CLUSTER OF PYRITE CUBES**  
SPAIN

The intergrown cubes of natural form, supported on  
custom stand.  
6in. (15cm.) high

£3,000–5,000

\$4,100–6,700  
€3,500–5,700



67



■ 68

**A LARGE SPECIMEN OF AGATE**  
MADAGASCAR

The freeform polished on all sides and freestanding.  
20½in. (52cm.) high

£3,000–5,000

\$4,100–6,700  
€3,500–5,700



68



69

■ 69

**A LARGE SPECIMEN OF MICA, QUARTZ AND  
CALCITE**  
BRAZIL

Of natural form, free standing.  
27½ x 23⅝ x 13⅜ in. (70 x 60 x 34cm.)

£3,000–5,000

\$4,100–6,700  
€3,500–5,700

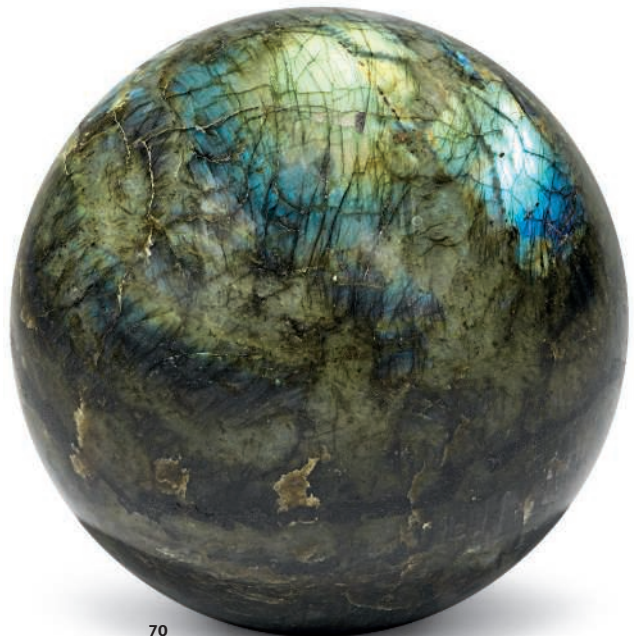
70

**A LABRADORITE SPHERE**  
MADAGASCAR

Cut and polished to spherical form.  
8in. (20.3cm.) diameter

£2,000–3,000

\$2,700–4,000  
€2,300–3,400



70



71

**71**  
**A SODALITE TABLE TOP**  
BRAZIL

The thick cut slice of sodalite loose on base  
18 x 42 x 37in. (45.5 x 106.5 x 94cm.)

£2,500-3,500

\$3,400-4,700  
€2,900-4,000

**72**  
**A RED JASPER BOWL**  
MADAGASCAR

Cut and polished to bowl form.  
20in. (51cm.) wide

£1,500-2,500

\$2,100-3,400  
€1,800-2,800



72



73

**73**  
**AN AGATE SLICE**  
BRAZIL

The slice cut thin to allow translucency, supported  
on stand.

18in. (46cm.) wide

£2,000-3,000

\$2,700-4,000  
€2,300-3,400





74

■ \*74

**A LARGE SPECIMEN OF LABRADORITE**  
MADAGASCAR

The freeform polished to the front displaying strong flashes of iridescence from various angles.  
26in. (66cm.) high

£3,000–5,000

\$4,100–6,700  
€3,500–5,700

■ 75

**A SPECIMEN OF AMETHYST**  
BRAZIL

From Rio Grande du Sol, cut and polished to reveal large crystals with deep colour. On rotating display stand.

23 x 16½ x 12½ in. (59 x 42 x 32 cm.)

£7,000–10,000

\$9,400–13,000  
€8,000–11,000



75



76

76

**A CITRINE SPHERE**  
BRAZIL

The natural citrine with rich dark colour, cut and polished to form of crystal ball  
4½ in. (11.4 cm.) diameter

£3,000–5,000

\$4,100–6,700  
€3,500–5,700



**77**

**AN AESTHETIC SPECIMEN OF MALACHITE**  
KATANGA PROVINCE

The freeform polished and supported on custom stand.  
15in. (38cm.) high

£4,000–6,000

\$5,400–8,100

€4,600–6,800



■ 78

**A SPECIMEN OF GRAPE AGATE**  
INDONESIA

Of natural form, supported on custom stand.  
21½ in. (54.5 cm.) high

£6,000–9,000

\$8,100–12,000  
€6,900–10,000



79

80

**A FLAME OF QUARTZ**  
BRAZIL

Cut and polished to flame form to best highlight the  
flashes of rainbow refraction internally.  
15 in. (38.1 cm.) high

£5,000–8,000

\$6,800–11,000  
€5,700–9,100



80



78

79

**A SPECIMEN OF CHALCEDONY**  
GERMANY

Of natural form, supported on custom stand.  
13 in. (33 cm.) high

£1,000–1,500

\$1,400–2,000  
€1,200–1,700





FOSSILS (LOTS 81-156)





■ 81

**A LARGE FOSSIL SEALILY**  
GERMANY

From the Lower Jurassic, Toarcian (174-182 million years ago) Posidonienschiefer Formation, Holzmaden Germany, the 8-foot long curved specimen of *Seirocrinus subangularis* with 27-inch wide crown.

86½ x 47in. (225 x 120cm.)

£30,000–50,000

\$41,000–67,000

€35,000–57,000

Crinoids, also known as sealilies or feather stars, are examples of living fossils. They belong to the phylum Echinodermata, and are distantly related to the starfish, brittle star and sea urchin. Filter feeders, with crowns of pinnules that trap microscopic particles on which to feed, they sway back and forth on the ocean floor. Their fossil remains are found all over the world, but most beautiful and best preserved examples are those from the Posidonia shale beds of Holzmaden in southern Germany. The strong dark colour of the shale matrix serves as a beautiful background to the delicate serpentine neck of the fossil, highlighted by the subtle shimmer of pyritisation. The matrix itself has been prepared, to better the contrast with the superb three-dimensional detail of the fossil itself which stands out in high relief. This specimen remains attached to a piece of driftwood (not all species anchored themselves to the ocean floor, but floated through the oceans attached to drifting floral debris) and gathered around its holdfast are the remains of other members of the colony.



82

**A WHITE FOSSIL SEA LILY**  
RUSSIA

Probably a *Pegocrinus* sp. from the Carboniferous (359-299 million years ago) supported on custom.  
12 in. (30.5 cm.) high

£2,000-3,000

\$2,700-4,000  
€2,300-3,400



82



83

■ 83

**A FOSSIL SEA LILY**  
MOROCCO

From the Silurian (444-419 million years ago) the *Scyphocrinus elegans* in original matrix supported on stand.  
26 in. (66 cm.) high

£3,000-5,000

\$4,100-6,700  
€3,500-5,700





**84**

**A CRINOID PLAQUE**

CHINA

From the Upper Triassic, Carnian (237-227 million years ago) the *Traumatocrinus* sp. in original matrix  
20 x 14in. (51 x 35.5cm.)

£2,500-3,500

\$3,400-4,700

€2,900-4,000



■ 85

**A DOUBLE FOSSIL SEALILY PLAQUE**  
GERMANY

From the Lower Jurassic, Toarcian (174-182 million years ago) Posidonienschiefer Formation, Holzmaden Germany, two curved specimens of *Seirocrinus subangularis* with well preserved crowns, both placed in a stabilised matrix, anchored to flotsam.

71 x 37½ in. (180 x 95cm.)

£25,000-35,000

\$34,000-47,000  
€29,000-40,000







86

■ 86  
**AN ICHTHYOSAUR WITH STOMACH CONTENTS**  
 GERMANY

From the lower Jurassic (200-176 million years ago) Posidonienschiefer formation, the *Stenopterygius triscissus* showing some three-dimensionality of preservation, notably to skull, partially digested belemnite fragments in stomach and a the shell of *Acrocoelites* lying on ribcage. 31 x 75 in. (78.7 x 190.5 cm.)

£25,000–35,000	\$34,000–47,000
	€29,000–40,000

The preservation of stomach contents is very rare in the fossil record. This specimen has some ambiguity to it as the large belemnite shell seems to lie atop the ribcage suggesting it was deposited post burial, the small hooks under the ribcage were digested by the animal and may well come from a similar species of belemnite.

The first complete Ichthyosaurus skeleton was found by Mary Anning at Lyme Regis in 1811 (an *Ichthyosaurus communis*). The order Ichthyosauria was introduced in 1840 by Sir Richard Owen, and today about 80 species are recognised. They take their name from the Greek for "fish lizards" and are an excellent example of convergent evolution. It is thought that they evolved from land based lizards moving into the sea, eventually converging on the shape of the fish upon which they preyed.

■ 87  
**A LARGE FOSSIL CROCODILE**  
 GERMANY

*Steneosaurus bollensis* from the Lower Jurassic, Toarcian (182-174 million years ago) Posidonienschiefer Formation Holzmaden, the 9½-foot specimen with three-dimensional preservation, placed in shale and framed. 73 x 51in. (187 x 131cm.)

£70,000–100,000	\$94,000–130,000
	€80,000–110,000

Despite being not-too-distant relatives of the dinosaurs, the crocodylians survived the great extinction at the end of the Cretaceous (66 million year ago). Steneosaurs were a successful genus in the Jurassic, with at least twelve species found in sites across Europe and Morocco since 1825. A long snout with sharp teeth would suggest a diet predominantly of small fish. The preservation of armoured scutes to the body hint of a more combative lifestyle in the coastal waters of the Tethys Ocean 180 million years ago.







AMMONITES (LOTS 88-111)







88

■ 88

**TWO LARGE FRENCH AMMONITES**  
LORRAINE, FRANCE

*Coronicerus* sp. from the Toarcian, Jurassic (183-174 million years ago) with small *Gryphea* shells in matrix.  
29in. (74cm.) high

£5,000-8,000

\$6,800-11,000  
€5,700-9,100

■ 89

**AN ENGLISH AMMONITE**  
LYME REGIS

From the Jurassic (201-145 million years ago) the *Arietites bucklandi* revealing suture lines, supported on stand.  
20in. (51cm.) high

£3,000-5,000

\$4,100-6,700  
€3,500-5,700



89

The ammonites are a group of fossil molluscs that lived in the seas from the mid-Devonian (approximately 400 million years ago) to the end of the Cretaceous (65 million years ago). Their name derives from their similarity in shape to the rams' horns of the Egyptian deity Ammon, a term coined by Pliny the Elder (23-79). In medieval England, long before their fossiliferous nature was fully understood, their ends were often carved into a serpent's head and they were termed snakestones.

Despite their shared symmetric spiral growth pattern, the group also displays great diversity. Depending on the local geological setting in which they were deposited their present colours can vary hugely. Their shapes were formed to suit their ecological needs, some of the rarest displaying uncoiled and even asymmetrical shells.

Some species from the group lived for a short enough geological time (still on the scale of hundreds of thousands of years) that when they are found in rocks of different continents, those rocks can be coincidentally dated by scientists to the same age. The sequence of events that famously killed off the dinosaurs also drove the ammonites to extinction.





90

■ 90

**A VERY LARGE AMMONITE**  
MOROCCO

From the Cretaceous (145-66 million years ago) a 28-inch *Mantelliceras* sp. the with some carving, mounted on stand 24 x 28 in. (61 x 71.1 cm.)

£4,000-6,000

\$5,400-8,100

€4,600-6,800



91

■ 91

**A LARGE AMMONITE**  
LYME REGIS

The *Arietites* sp. from the Jurassic ( 201-145 million years ago) 23 in. (58.4 cm.) diameter

£2,500-3,500

\$3,400-4,700

€2,900-4,000



92

■ 92

**AN AMMONITE IN MATRIX**  
GERMANY

From the Lower Jurassic, Toarcian (174-182 million years ago) Posidonienschiefer Formation, Holzmaden Germany, the matrix worked away to reveal at least two species of ammonite, the *Harpoceras* sp., in original matrix on stand. 41¼ x 29½ x 15¾ in. (106 x 74 x 40 cm.)

£2,500-3,500

\$3,400-4,700

€2,900-4,000



93

■ \* 93

**A SPLIT AMMONITE**  
VOLGA RIVER, RUSSIA

The 13-inch specimen of *Speetonicerias* sp. from the Jurassic (200-145 million years ago) split and polished to reveal internal chambers, some naturally filled with a bright yellow calcite, surrounded by lustrous pyrite lines, supported on custom stands. each 13in. (34cm.) wide

£1,200-1,800

\$1,700-2,400  
€1,400-2,000



94

94

**A RARE AMMONITE AND BELEMNITE ASSEMBLAGE**  
TIMOR, INDONESIA

The specimens prepped in their original matrix, supported on steel stand.

17 in. (43.2 cm.) high

£3,000-5,000

\$4,100-6,700  
€3,500-5,700

■ 95

**A LARGE AMMONITE GROUP**  
BELMONT, FRANCE

From the late Jurassic (circa 150 million years ago) a mass mortality of *Hammatoceras* sp. with belemnites, one ammonite polished to reveal suture lines.

37 x 31 x 9in. (94 x 79 x 23cm.)

£2,000-3,000

\$2,700-4,000  
€2,300-3,400



95





96

■ 96

**AN UNCOILED AMMONITE IN MATRIX**  
MOROCCO

The delicate ammonite probably a *Emericeras barremense* from the Cretaceous (145-66 million years ago)  
15 in. (38.1 cm.) high

£6,000-9,000

\$8,100-12,000

€6,900-10,000

■ 97

**A LARGE GROUP OF FOSSIL AMMONITES**  
BELMONT, FRANCE

From the Late Jurassic (circa 150 million years ago) a mass mortality of belemnites with ammonites, *Hammatoceras sp*  
37 $\frac{3}{8}$  x 19 $\frac{3}{8}$  x 7 $\frac{7}{8}$  in. (95 x 50 x 20 cm.)

£3,000-5,000

\$4,100-6,700

€3,500-5,700



97



98

**A FINE UNCOILED SPINY AMMONITE**

FRANCE

From the Hauterivian, Early Cretaceous (circa 133-129 million years ago), the fine 16-inch specimen of *Crioceratites nolani* prepped on original matrix to form a free-standing sculpture supporting the ammonite showing a state of marvelous preservation.  
24 x 16 x 7in. (61 x 40.5 x 17.5cm.)

£30,000-50,000

\$41,000-67,000

€35,000-57,000

**LITERATURE:**

*Heteromorph : the rarest fossil ammonites : nature at its most bizarre.* Wolfgang Gurke. [n.p.]: At One Communications, September 2014

Still veiled in mystery, the evolutionary benefit of the uncoiled form is still not fully understood. It may have been that this species inhabited the benthic zone, and thus did not require a form suited to swimming. The spiny defences would therefore have been necessary to protect a slow moving animal on the sea floor.

The inner coils of this specimen have been worked away from the matrix to free the specimen to highlight its unusual shape. Countless hours of careful work were required to prepare this specimen to reveal one of the most extraordinary forms that has been sculpted by nature.





99

■ 99

**A VERY LARGE SPLIT AMMONITE**  
MADAGASCAR

A *Cleoniceras* sp. from the early Cretaceous (approx. 135 million years ago), split and polished to reveal inner chambers of honey-coloured calcite, mounted on frames 31 x 25 in. (79 x 64 cm.)

£5,000–8,000

\$6,800–11,000  
€5,700–9,100

■ 100

**AN AMMONITE**  
MADAGASCAR

*Lytoceras* sp. from the Jurassic (201–145 million years ago) polished and cut at end to reveal suture lines, supported on custom stand. 12 in. (30.5 cm.) high

£3,000–5,000

\$4,100–6,700  
€3,500–5,700



100



■ 101

**AN UNCOILED AMMONITE WITH TRILOBITE**  
MOROCCO

From the Lower Devonian (419-393 million years ago) the *Anetoceras* sp. with a small trilobite (possibly a *Reedops* sp.) in same matrix.  
17 in. (43.2 cm.) high

£10,000-15,000

\$14,000-20,000  
€12,000-17,000





**\* 102**

**A RARE HORNED HETEROMORPH AMMONITE**  
SOUTH DAKOTA

From the Upper Campanian, Cretaceous (circa 72 million years ago) the specimen of *Didymoceras cheyennense* on block of its original matrix supported with stand.  
13 x 9 x 9 in. (33 x 23 x 23 cm.)

£2,000–3,000

\$2,700–4,000  
€2,300–3,400

This very rare and uncoiled ammonite is "among the most striking and remarkable natural objects known from the Cretaceous rocks of the U.S. Western Interior". The helical shape with looped tapering finial has provided much debate for palaeontologists as it would not have made an efficient swimmer, and the three different orientations of coiling would present different challenges to the mollusc living inside the shell as they changed the direction of growth.



103

■ 103

**A "WINGED" AMMONITE GROUP**  
BELMONT, FRANCE

Specimens of *Lytoceras cornucopia* with ribbed "wings" preserved, in original matrix with belemnites and another smaller ammonite. 25in. (64cm.) high

£3,000-5,000

\$4,100-6,700  
€3,500-5,700



104

■ \* 104

**AN AMMONITE**  
MADAGASCAR

From the Jurassic (201-145 million years ago) the finely preserved *Kranaosphinctes rabei* with most of shell still intact, supported on custom stand.

16in. (41 cm.) diameter

£2,000-3,000

\$2,700-4,000  
€2,300-3,400



■ 105

**A MASSIVE AMMONITE**

MADAGASCAR

From the Jurassic (201-145 million years ago) the very large and well preserved *Kranaosphinctes rabei* stable to stand on its end, with a smaller specimen in the matrix by its opening.

23in. (59 cm.) diameter

£10,000-15,000

\$14,000-20,000

€12,000-17,000

One of the largest examples of this species we have seen.



■ 106

**A GROUP OF HETEROMORPH AMMONITES**  
MOROCCO

From the Cretaceous (145–66 million years ago) the *Emericiceras barremense*  
prepped in original positions in matrix.  
33 x 22 in. (83.8 x 55.9 cm.)

£10,000–15,000

\$14,000–20,000

€12,000–17,000







106

■ 107  
**A LARGE AMMONITE**  
 MADAGASCAR

A *Cloniceras* sp. from the early Cretaceous (circa 135 million years ago) the 20-inch specimen polished to reveal suture lines and colours of reds, oranges and yellows, the end carved to mimic suture lines. On stand.  
 23 x 19 in. (58.4 x 48.3 cm.)

£3,000–5,000

\$4,100–6,700

€3,500–5,700

■ 108  
**AN UNCOILED AMMONITE**  
 MOROCCO

From the Cretaceous (145–66 million years ago) the specimen of *Emericiceras barremense* prepared in Germany,  
 22 x 12 in. (57 x 30 cm.)

£3,000–5,000

\$4,100–6,700

€3,500–5,700



108

■ 109

**AN ENGLISH AMMONITE**

LYME REGIS

From Lower Lias, Jurassic (208-198 million years ago) the 18-inch *Paracorinicer* sp. supported in original matrix on stand. 24 in. (61 cm.) high

£2,500–3,500

\$3,400–4,700  
€2,900–4,000



109



110

■ 110

**A LARGE POLISHED AMMONITE**

MADAGASCAR

The polished and carved 16-inch *Douvilleicer* sp. from the Cretaceous (circa 145–66 million years ago), supported on stand.

21 in. (53.3 cm.) high

£3,000–5,000

\$4,100–6,700  
€3,500–5,700



111

111

**A POLISHED AMMONITE**

MADAGASCAR

*Lytoceras* sp. from the Jurassic (201–145 million years ago) polished and cut at end to reveal suture lines, supported on custom stand.

10 in. (25.4 cm.) high

£2,000–3,000

\$2,700–4,000  
€2,300–3,400





112

■ 112

**A SPHERE OF PETRIFIED WOOD**  
INDONESIA

From the Miocene (circa 20 million years ago) cut and polished, the growth rings still visible  
13½ in. (34.2 cm.) high

£5,000-8,000

\$6,800-11,000

€5,700-9,100

■ 113

**A PETRIFIED WOOD PLINTH**  
INDONESIA

From the Miocene (circa 20 million years ago) cut and polished  
31½ x 11½ x ¾ in. (80.5 x 30 x 2 cm.)

£3,000-5,000

\$4,100-6,700

€3,500-5,700



113



114

■ 114

**A LARGE SLICE OF PETRIFIED WOOD**  
NORTHERN ARIZONA

*Araucarioxylon arizonicum* from the Triassic (circa 225 million years ago) sliced longitudinally and polished to reveal a rainbow of colours, in table top form

52 x 24 x 2½ in. (132.1 x 61 x 6.4 cm.)

£5,000–8,000

\$6,800–11,000

€5,700–9,100



115

■ 115

**A LARGE SLICE OF PETRIFIED WOOD**  
NORTHERN ARIZONA

*Araucarioxylon arizonicum* from the Triassic (circa 225 million years ago) sliced in cross-section and polished to reveal a rainbow of colours, some growth rings still visible, in mounted as coffee table.

15½ x 60 x 36in. (39.5 x 152.5 x 91 cm.)

£7,000–10,000

\$9,400–13,000

€8,000–11,000



116

■ 116

**A SPECIMEN OF PETRIFIED TREE TRUNK**  
NORTHERN ARIZONA

From the Triassic (circa 225 million years ago) the specimen of *Araucarioxylon arizonicum* the cut and polished to reveal internal colours and rings, the exterior partially polished to reveal longitudinal patterns and preserving texture in places.

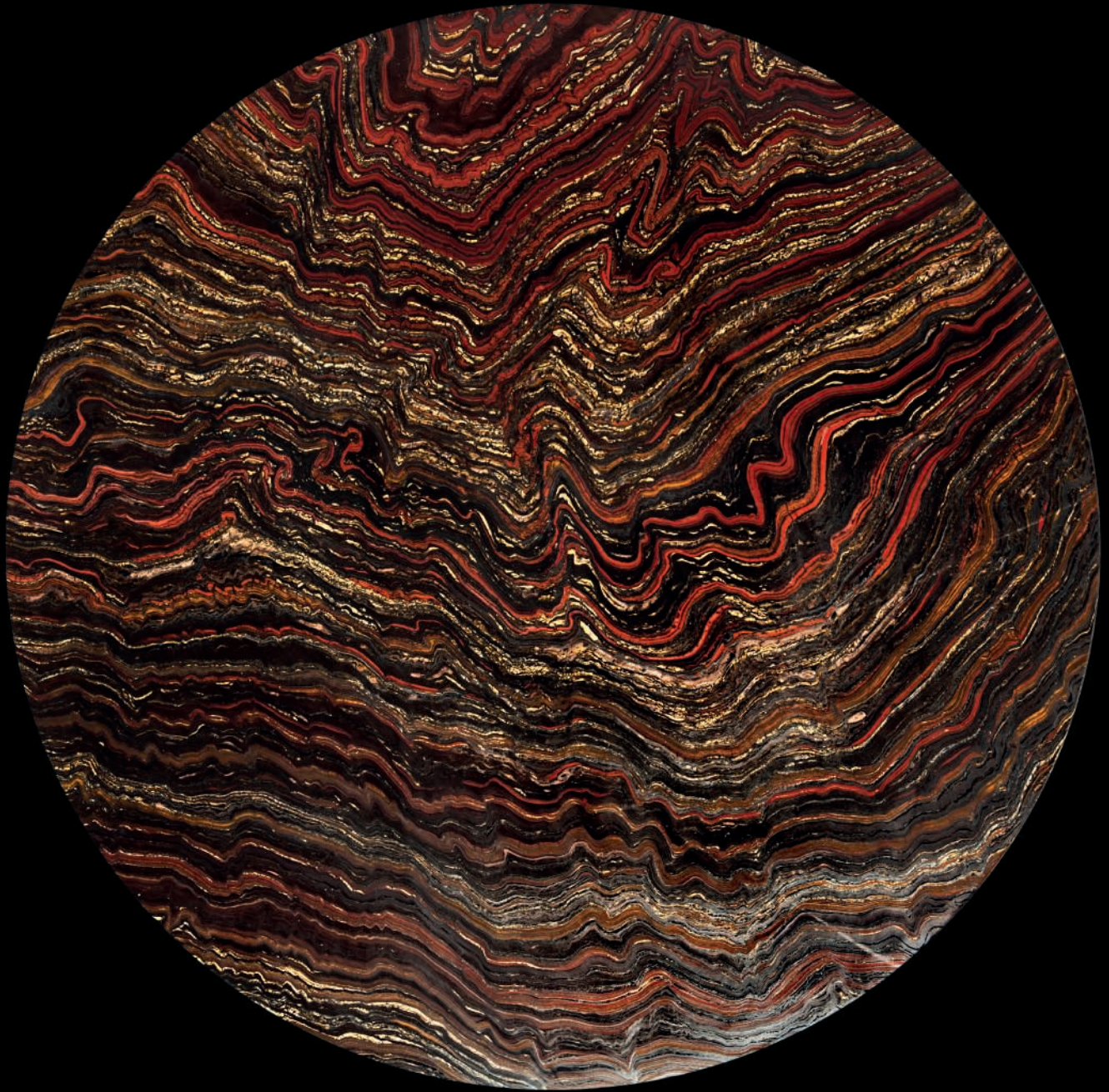
23 in. (59cm.) high

£5,000–8,000

\$6,800–11,000

€5,700–9,100





■ \* 117

**A SPECIMEN OF TIGER IRON**  
ORD RANGES, AUSTRALIA

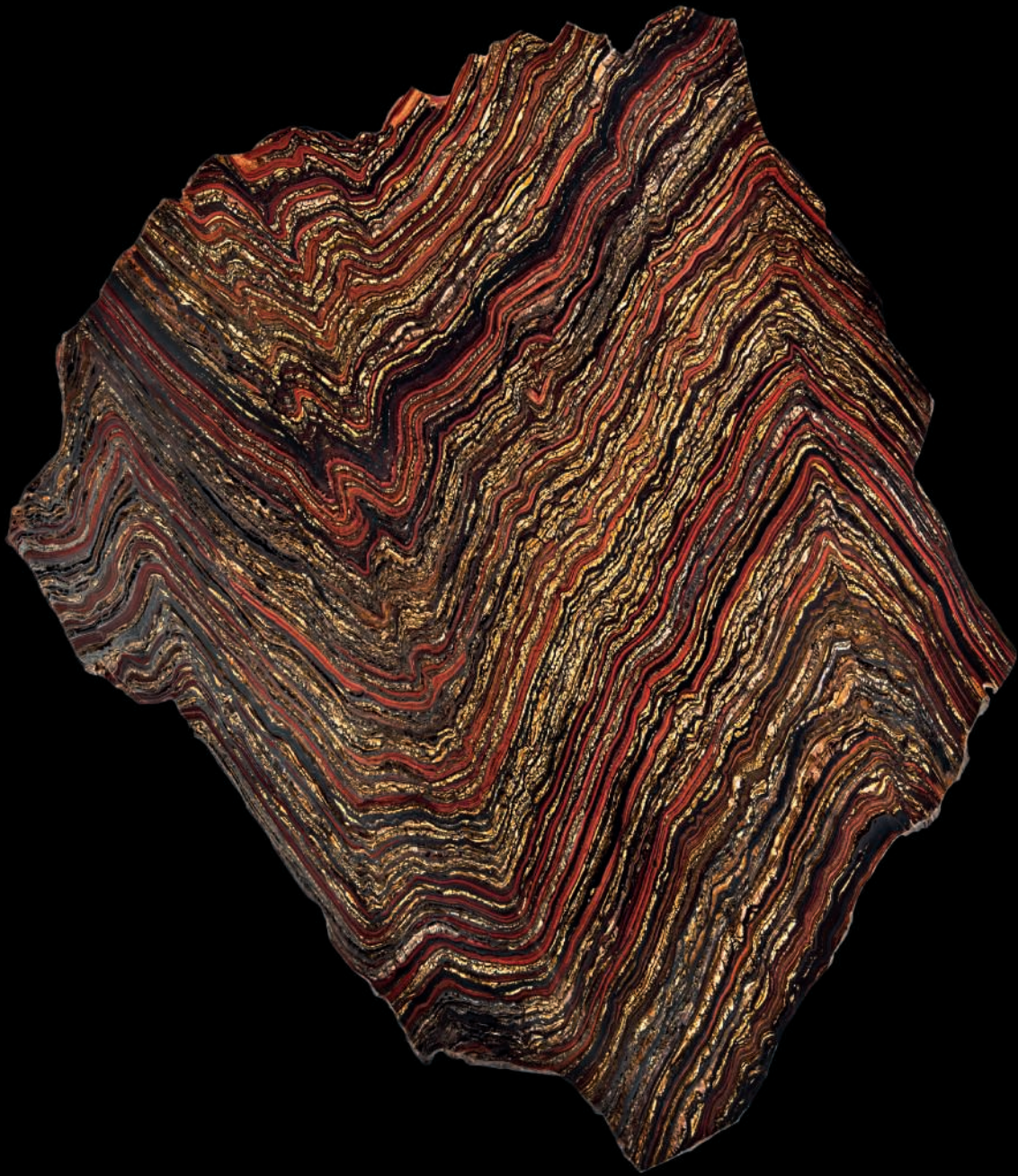
From the Paleoproterozoic (2.5 to 1.6 billion years ago) the banded layers of hematite, jasper and chatoyant Tiger-eye, cut and polished in the form of a table top.  
32% x 32% x 1 in. (83 x 83 x 2.5 cm.)

£10,000-15,000

\$14,000-20,000  
€12,000-17,000

As one of the earliest fossilized forms of life, a mystery still surrounds the creation of Tiger Iron almost 2 billion years ago -- during a hostile era when the newly formed continents were barren and life was confined to the seas. Scientists have suggested that it is a banded iron formation (layered sediments caused by photosynthetic cyanobacteria) or a Stromatolite (layers of algae), or even both. Simple photosynthesising life forms such as these dominated the first two billion years of life on Earth, and were probably the source of the Oxygen in the atmosphere.





■ \* 118

**A LARGE SLICE OF TIGER IRON**  
ORD RANGES, AUSTRALIA

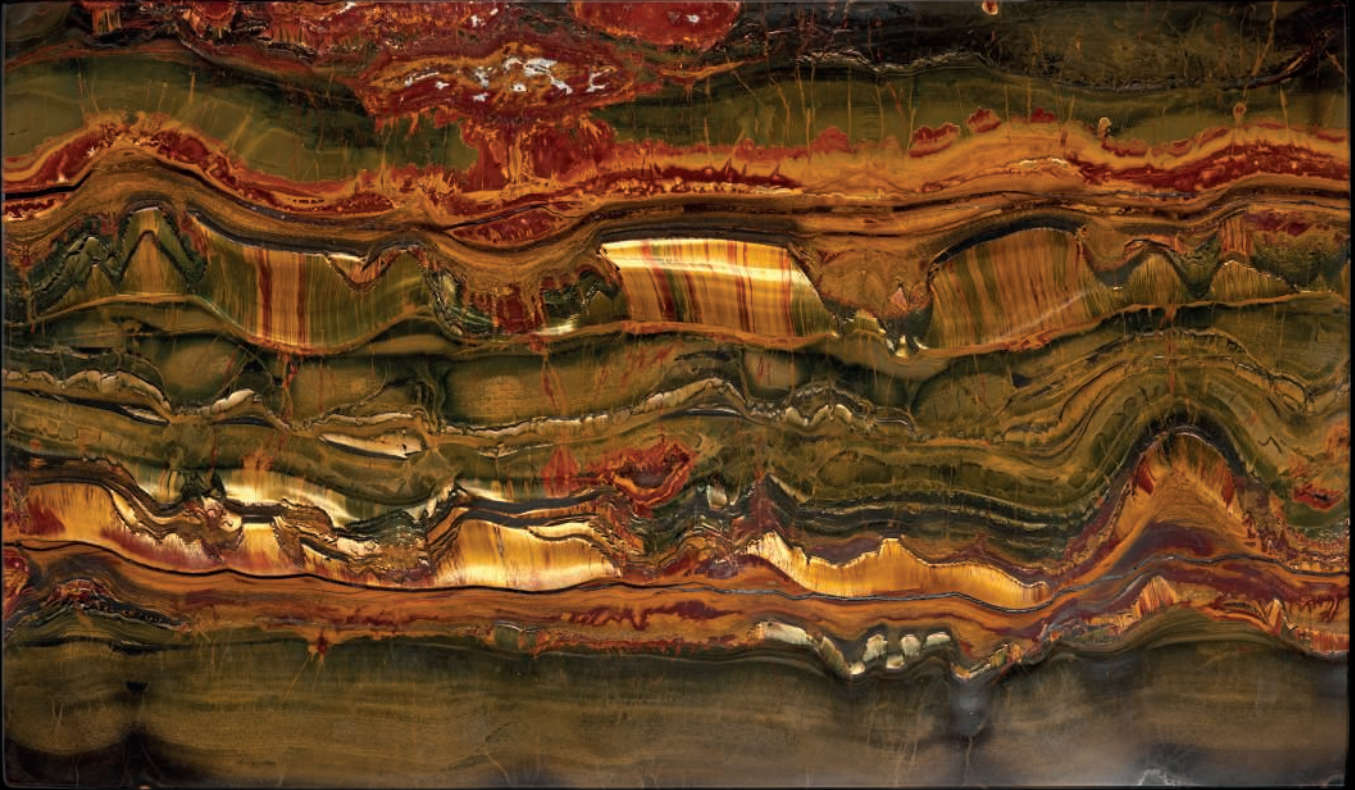
From the Paleoproterozoic (2.5 to 1.6 billion years ago) the banded layers of hematite, jasper and chatoyant Tiger-eye polished, with natural edges to the slice.  
36% x 31% x 1/4 in. (93 x 81 x 2 cm.)

£5,000-8,000

\$6,800-11,000  
€5,700-9,100

As one of the earliest fossilized forms of life, a mystery still surrounds the creation of Tiger Iron almost 2 billion years ago -- during a hostile era when the newly formed continents were barren and life was confined to the seas. Scientists have suggested that it is a banded iron formation (layered sediments caused by photosynthetic cyanobacteria) or a Stromatolite (layers of algae), or even both. Simple photosynthesising life forms such as these dominated the first two billion years of life on Earth, and were probably the source of the Oxygen in the atmosphere.





■ \* 119

**BANDED IRON TIGER EYE SPECIMEN**

MT BROCKMAN STATION, AUSTRALIA

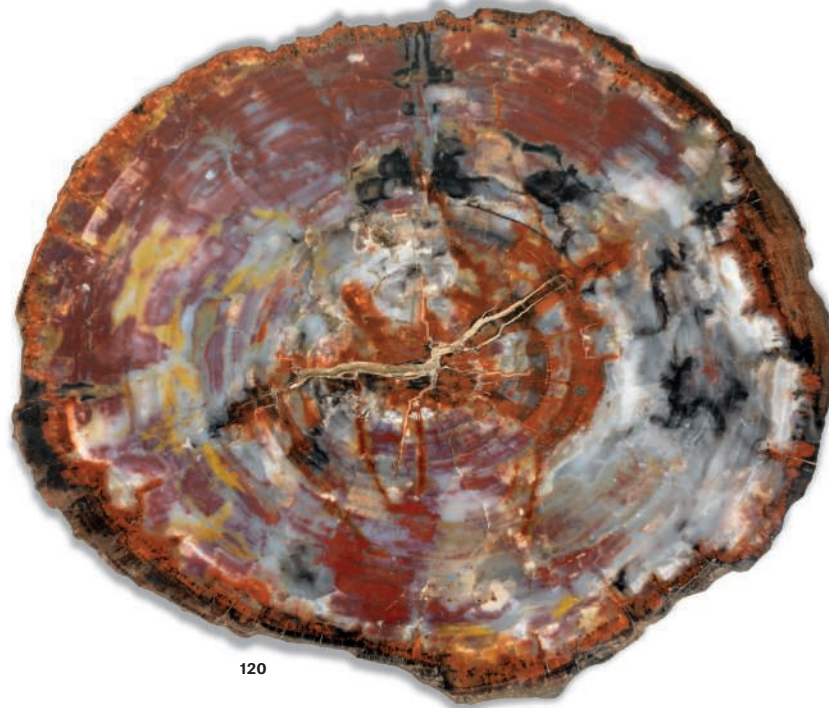
From the early Proterozoic (circa 2.5 billion years ago) the panel of Marra Mamba iron formation cut and polished in the form of a table top  
31<sup>7</sup>/<sub>8</sub> x 18<sup>7</sup>/<sub>8</sub> x 1<sup>1</sup>/<sub>8</sub> in. (81 x 48 x 3 cm.)

£10,000–15,000

\$14,000–20,000

€12,000–17,000

Found only in the blue crocidolite seams of the Hamersley Range in the Pilbara region of Western Australia, this highly iridescent ironstone, Marra Mamba, is amongst the rarest and most colourful of all Tiger-eye. Probably stromatolitic in origin, this fossil is amongst the earliest signs of life on Earth, and as a semi-precious stone is also one of the most beautiful.



120

■ \* 120

**A SLICE OF PETRIFIED WOOD**  
NORTHERN ARIZONA

*Araucarioxylon arizonicum* from the Triassic (circa 225 million years ago) sliced in cross-section and polished to reveal a rainbow of colours, some growth rings still visible, texture to edges preserved.  
23½ x 20 x 1¼in. (60 x 51 x 3cm.)

£2,000–3,000

\$2,700–4,000  
€2,300–3,400

■ \* 121

**A BOWL OF BANDED IRON TIGER EYE**  
MT BROCKMAN STATION, AUSTRALIA

From the early Proterozoic (circa 2.5 billion years ago) the specimen of Marra Mamba iron formation with a broad chatoyant band, cut and polished to form a bowl.  
21 in. (53.3 cm.) wide

£8,000–12,000

\$11,000–16,000  
€9,100–14,000

Found only in the blue crocidolite seams of the Hamersley Range in the Pilbara region of Western Australia, this highly iridescent ironstone, Marra Mamba, is amongst the rarest and most colourful of all Tiger-eye. Probably stromatolitic in origin, this fossil is amongst the earliest signs of life on Earth, and as a semi-precious stone is also one of the most beautiful.



121





122

■ 122

**A TALL PLAQUE OF FOSSILIZED SCALLOPS**  
SOUTHERN FRANCE

From the Upper Miocene, Burdigalian (20-16 million years ago) the specimens of *Gigantopectens restitutensis* up to 6 inches long, in original matrix.

44 x 18 x 8 in. (111.8 x 45.7 x 20.3 cm.)

£10,000-15,000

\$14,000-20,000

€12,000-17,000

■ 123

**AN ASSEMBLAGE OF BELEMNITES IN MATRIX**  
GERMANY

From the Lower Jurassic, Toarcian (174-182 million years ago) Posidonienschiefer Formation, Holzmaden Germany, the matrix worked away to reveal a mass mortality scene. Framed.

£3,000-5,000

\$4,100-6,700

€3,500-5,700



123





**\* 124**

**A TRILOBITE**  
MOROCCO

The *Psychopyge termierorum* from the Hamar Laghdad formation, Upper Emsian, Devonian (408-393 million years ago), prepared in original matrix by Jeff Hammer.

4½ x 3 x 2in. (12 x 9 x 5cm.)

£3,000-5,000

\$4,100-6,700  
€3,500-5,700

It has been suggested that the long sword-like appendage extending from the head of this species might have been used for fighting or even sexual display.

**■ 125**

**A PERMIAN DIAPSID**  
RANOHIRA, MADAGASCAR

From the Sankamena Formation (circa 265 million years ago) the near complete specimen of *Claudiosaurus gemaini* left in original position in limestone slab.

14 x 34in. (36 x 87cm.)

£15,000-25,000

\$21,000-34,000  
€18,000-28,000

This wonderfully preserved specimen is an example of the semi aquatic reptiles that inhabited the Oceans of the end of the Paleozoic. They survived the mass extinction event of the Permo-Triassic "The Great dying", and their relatives still exist today. By far the most impressive group of reptiles to evolve from the group were the largest animals to walk to the land the giant Dinosaurs such as the Brontosaurus of the Jurassic and the iconic Tyrannosaurus rex of the late Cretaceous. The Permian world which the Claudiosaur inhabited saw a varied climate that started with the Earth in an ice age, and ended with a warm dry world formed of one supercontinent Pangea. At the end of the Permian Period 95% of marine life and 70% of land organisms were to go extinct. The small lizard like creatures to survive this catastrophe were the best placed to dominate the next 200 million years. Without the Permian diapsids the Earth would not have seen the majestic creatures that made their fame in Jurassic Park.







■ \* 126

**A TRIPTYCH OF FOSSIL FISH PLAQUES**  
GREEN RIVER, WYOMING

From Eocene (circa 50 million years ago), the three panels with 13 placed fossil fish of various species, the largest a *Diplomystus dentatus*, arranged as if swimming through the rippling matrix.

48 x 24in. (122 x 61cm.) each (3)

£7,000-10,000

\$9,400-13,000  
€8,000-11,000









127

**127**

**THE SLAB AND COUNTER SLAB OF A FOSSIL DRAGONFLY**  
SOLNHOFEN, GERMANY

From the Jurassic (circa 150 million years ago) the 5-inch specimen of *Libellulum longialatum* preserved on both sides of original limestone matrix  
16 x 21 in. (40.6 x 53.3 cm.)

£2,500–3,500

\$3,400–4,700  
€2,900–4,000

**129**

**AN EXTINCT WATER-STRIDER**  
SOLNHOFEN, GERMANY

From the Jurassic (circa 150 Mya) the 9-inch specimen of *Chresmoda obscura* in original limestone matrix  
15½ x 18 in. (39.4 x 45.7 cm.)

£2,000–3,000

\$2,700–4,000  
€2,300–3,400



128



■ 128

**A JURASSIC AQUATIC LIZARD**

SOLNHOFEN, GERMANY

From the Tithonian age, Jurassic (circa 150 million years ago) the 4½-foot long *Pleurosaurus goldfussi*  
65 x 19½ x 1 in. (165 x 50 x 2.5 cm.)

£25,000–35,000

\$34,000–47,000

€29,000–40,000

*Pleurosaurus* lived in the warm waters of an archipelago, or lagoon, on the edge of an ancient ocean called the Thethys sea during the age of the Dinosaurs. Belonging to the order of lizard-like Rhynchocephalia (beaked-headed), their only surviving relatives are the tuataras of New Zealand. The present specimen is very finely preserved.





■ 130

**A RARE JURASSIC FLYING LIZARD**

SOLNHOFEN, GERMANY

From the Jurassic (circa 150 million years ago) the near complete 20-inch specimen of *Germanodactylus cristatus* placed in matrix.  
26 x 27 in. (66 x 70 cm.)

£80,000–100,000

\$110,000–130,000  
€91,000–110,000

These winged lizards were originally classified as a new species of Pterodactyl when first discovered in 1901, but has been subsequently renamed. They are the rarest of the Pterosaurs to come from Solnhofen with only four specimens known in institutional holdings. The current example has the largest recorded wingspan, estimated at 55 inches.





■ 131

**APTEROSAUR**  
SOLNHOFEN, GERMANY

From the Jurassic (circa 150 million years ago) the 21-inch specimen of *Rhamphorhynchus muensteri* with finely preserved skull placed in matrix 37 x 26in. (94 cm x 67cm.)

£60,000-90,000

\$81,000-120,000  
€69,000-100,000

From the order Pterosauria "flying-lizards" that includes the pterodactyls, this large flying dinosaur with a 50-inch wingspan is one of the largest and rarest found in the Solnhofen formation. A light-weight body with hollow bones made it perfectly adapted to life in the air above the Jurassic coast. On very rare occasions they would have fallen into muddy lagoon below, to be preserved and turned to stone over the millions of years. The name *Rhamphorhynchus* means "beak-snouted" and with its fearsome set of teeth it would have preyed upon the fish of the Solnhofen fauna.





132



133

■ \* 132

**A LARGE FOSSIL FISH MORTALITY PLAQUE**  
GREEN RIVER WYOMING

From the Eocene (circa 50 million years ago), the panel with 35 fossil fish of various species prepped and other still in the matrix.  
55 x 40½ in. (140 x 103cm.)

£7,000–10,000

\$9,400–13,000

€8,000–11,000

Caused by sudden toxic conditions in the lakes of Eocene Wyoming, mass mortalities of the population being preserved together give us a glimpse into the overall ecosystem of distant past.

■ \* 133

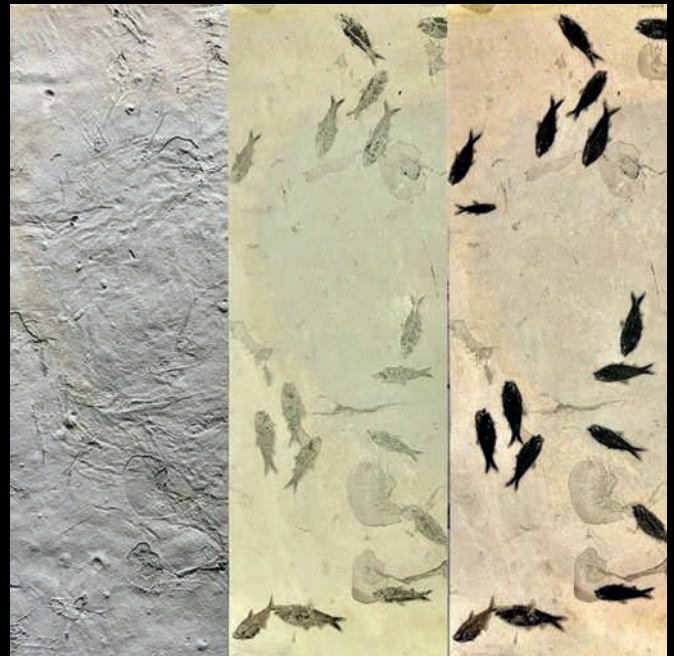
**A FOSSIL FISH MORTALITY PLAQUE**  
GREEN RIVER WYOMING

From the Eocene (circa 50 million years ago), the panel with 23 fossil fish of various species fully prepped with others still in the matrix.  
52 x 25 in. (132.1 x 63.5 cm.)

£4,000–6,000

\$5,400–8,100

€4,600–6,800



Three photographs showing the various stages of preparation



134

■ 134

**A LARGE FOSSIL PALM FLOWER AND FISH**  
GREEN RIVER, WYOMING

From the Eocene (circa 50 million years ago) the flower of a *Sablites sp.* with infill, the matrix with multiple placed small fish framed.  
57 $\frac{1}{8}$  x 29 $\frac{1}{2}$  x 2 in. (145 x 75 x 5 cm.)

£20,000–30,000

\$27,000–40,000  
€23,000–34,000



135

■ \* 135

**A PLAQUE OF SEVEN FOSSIL FISH**  
GREEN RIVER, WYOMING

From the Eocene (circa 50 million years ago), the large panel showing layers of strata with *Diplomystus dentatus* and *Priscacara serrata*  
51 x 34 in. (129.5 x 86.5 cm.)

£6,000–9,000

\$8,100–12,000  
€6,900–10,000





136

■ 136

**A LARGE FOSSIL FISH**  
GREEN RIVER, WYOMING

From the Eocene (circa 50 million years ago) a 22-inch specimen of *Phareodus encaustus* showing fine dentition  
23 x 35in. (58.5 x 89cm.)

£5,000–8,000

\$6,800–11,000  
€5,700–9,100

■ \* 137

**A PARTIAL FOSSIL PALM FROND WITH FISH**  
GREEN RIVER FORMATION, WYOMING

from the Eocene (circa 50 million years ago), a partial specimen of *Sabalites* sp. in limestone matrix, with placed *Diplomystus dentatus*  
26 x 46in. (66 x 117cm.)

\$10,000–15,000

\$14,000–20,000  
€12,000–17,000



137



■ \* 138

**A FOSSILISED GIANT PALM FROND**

GREEN RIVER FORMATION, WYOMING

From the Eocene (circa 50 million years ago), a specimen of *Sabalites sp.* in uncut limestone matrix  
36 x 18in. (92 x 46cm.)

£5,000–8,000

\$6,800–11,000  
€5,700–9,100





■ 139

**A FOSSILISED GIANT PALM FROND**  
GREEN RIVER FORMATION, WYOMING

From the Eocene (circa 50 million years ago), a finely preserved specimen of *Sabalites* sp. with minimal infill, in limestone matrix with placed fossil fish *Phareodus* sp., framed.  
97 $\frac{7}{8}$  x 61 $\frac{1}{8}$  x 5 $\frac{1}{2}$  in. (248 x 157 x 14 cm.)

£30,000–50,000

\$41,000–67,000  
€35,000–57,000

The palms of the Green River Formation represent a flora bordering a warm freshwater lake 50 million years ago. Plant material is amongst the rarest in the fossil record, and these palms are amongst the largest and finest preserved, rarely surviving as intact as the present example.









**\*140**

**A RARE FOSSIL TURTLE WITH DINOSAUR TOOTH**

MONTANA

From the Hell Creek Formation, Garfield County, late Cretaceous (68-65 million years ago) the shell of a *Palatobaena* sp. with an Ankylosaur tooth in the same matrix to the underneath.  
11in. (28cm.) long

£3,500-4,500

\$4,700-6,000

€4,000-5,100



**141**

**A VERY LARGE MEGALODON TOOTH**

SOUTH CAROLINA, USA

6¼-inch tooth of a *Carcharocles megalodon* from the Langhian (16-14 million years ago), Hawthorn formation, Edisto River, supported on custom stand.

8in. (21cm.) high

£5,000-8,000

\$6,800-11,000

€5,700-9,100





142

**\* 142**

**A LARGE MEGALODON TOOTH**  
SOUTH CAROLINA

The 5½-inch *Carcharocles megalodon* from the Langhian (16-14 million years ago) with speckled blue-grey colours.  
5½in. (14cm.)

£3,000-5,000

\$4,100-6,700

€3,500-5,700

**\* 143**

**A FINE MEGALODON TOOTH**  
SOUTH CAROLINA

The finely preserved 5¼-inch *Carcharocles megalodon* from the Langhian (16-14 million years ago) with a delicate patina and sharp serrations.  
5¼in. (13cm.)

£2,500-3,500

\$3,400-4,700

€2,900-4,000



143

**\* 144**

**THE TOOTH OF A TYRANNOSAURUS-REX**

WYOMING

From the Lance Formation, Niobrara County, Maastrichtian, late Cretaceous (72-66 million years ago) the 4-inch tooth of a *Tyrannosaurus rex*, on stand with portion of cervical from same species.

8in. (21cm.) high

£6,000-10,000

\$8,100-13,000

€6,900-11,000

The most famous and iconic of all dinosaur species, the T-rex was first described by Henry Fairfield Osborn in 1905 from a skeleton found in 1902 from the Hell Creek Formation in Montana. Standing over 13ft tall and 40ft long, the T-rex was the top predator of the late Cretaceous, and amongst the last dinosaurs to walk the earth before their mass extinction.







■ \* 145

**A TRICERATOPS HUMERUS**

WYOMING

From the Lance Formation, Niobrara County, Maastrichtian, late Cretaceous (68-65 million years ago), a brow horn from a *Triceratops sp.*, on custom stand  
34in. (86cm.) high on stand

£4,000-6,000

\$5,400-8,100  
€4,600-6,800



146

**\* 146**

**A SMALL TRICERATOPS HORN**  
WYOMING

From the Lance Formation, Niobrara County, Maastrichtian, late Cretaceous (68-65 million years ago), a brow horn from a *Triceratops sp.* on custom stand  
18in. (46cm.) long

£4,000-6,000

\$5,400-8,100  
€4,600-6,800

**\* 147**

**THE VERTEBRA OF A TRICERATOPS**  
MONTANA

From the Hell Creek Formation, Maastrichtian, late Cretaceous (68-65 million years ago), a Caudal vertebra of a *Triceratops sp.*, on custom stand.  
12in (31cm.) high

£1,800-2,400

\$2,500-3,200  
€2,100-2,700



147





148

■ 148

**THE FOOT OF A CRETACEOUS DINOSAUR**  
MONTANA

From the Hell Creek Formation, Garfield County, Late Cretaceous (77-66 million years ago) the foot of a *Struthiomimus altus*. mounted for wall hanging. 26 x 8 x 3in. (67 x 21 x 8cm.)

£6,000-8,000

\$8,100-11,000  
€6,900-9,100

As their name implies, *Struthiomimus* were Ostrich like in appearance, being long-legged dinosaurs with toothless beaks

■ \* 149

**THE HAND CLAW OF A CRETACEOUS DINOSAUR**  
MONTANA

From the Hell Creek Formation, Garfield County, Late Cretaceous (77-66 million years ago) the claw and phalanx of a *Struthiomimus altus*. supported on fitted stand.

7in. (18cm.) long

£2,500-3,500

\$3,400-4,700  
€2,900-4,000

As their name implies, *Struthiomimus* were Ostrich like in appearance, being long-legged dinosaurs with toothless beaks.



149

■ \* 150

**A LARGE TRICERATOPS HORN**

WYOMING

From the Lance Formation, Niobrara County, Maastrichtian, late Cretaceous (68-65 million years ago), a brow horn from a *Triceratops* sp., on custom stand.

47½in. (121cm.) long

£10,000-15,000

\$14,000-20,000

€12,000-17,000

With its three-horned head, the triceratops is one of the most famous species of dinosaur. They lived at the very end of the Cretaceous Period before the fatal mass-extinction triggered by the asteroid that caused the Chicxulub crater 65 million years ago. These 30-foot long herbivores, weighing 12 tonnes, roamed in an area that is now to the East of the Rocky Mountains in North America, which then had a mild climate. They lived contemporaneously with, and were preyed upon by, *Tyrannosaurus rex*.







■ 151

**A LARGE DINOSAUR LEG**

MONTANA

From Two Medicine Formation, Glacier County, the late Cretaceous (84-75million years ago) the right leg of *Hypacosaurus stebingeri*, supported on custom stand.  
56in. (143cm.)

£15,000-20,000

\$21,000-27,000

€18,000-23,000

**PROVENANCE:**

Excavated from private land in 2015.

An example of the famous of the duck-billed dinosaurs, *Hypacosaurus* name means less high lizard as it was almost as tall as the largest of the late Cretaceous dinosaurs the tyrannosaurids, who would certainly have predated upon it.







■ 152

**THE SKULL OF AN ENGLISH ICHTHYOSAUR**

LYME REGIS, DORSET

From the Jurassic (201-145 million years ago) the skull of a large *Leptonectes tenuirostris*, excavated from its matrix and preserved in three dimensions, mounted vertically on stand.

41¾ x 11⅞ x 4¾ in. (106 x 30 x 12 cm.)

£40,000–60,000

\$54,000–81,000

€46,000–68,000

The first complete Ichthyosaur skeleton was found at Lyme Regis in 1811 by Mary Anning (of "she sells sea-shells on the seashore" fame) . The order Ichthyosauria was introduced in 1840 by Sir Richard Owen, and today about 80 species are recognised. They take their name from the Greek for "fish lizards" and are an excellent example of convergent evolution. It is thought that they evolved from land based lizards moving into the sea, eventually converging on the shape of the fish upon which they preyed.





153

■ 153

**A PARTIAL FOSSIL BISON SKULL**  
MONTANA

From the late Pleistocene (circa 10,000 years ago) the upper section of the skull of *Bison antiquus* supported on stand.  
25 in. (63.5 cm.) high

£5,000–8,000

\$6,800–11,000  
€5,700–9,100



154

■ \* 154

**A FOSSIL ENTELODONT OR SKULL**  
SOUTH DAKOTA

From the Brule Formation, Oligocene (34-30 million years ago), the skull of *Archaeotherium sp.* supported on turning wooden stand.  
14 x 17 x 11in. (36 x 44 x 28cm.)

£10,000–15,000

\$14,000–20,000  
€12,000–17,000

Often termed "THE HOG FROM HELL" or a "KILLER PIG", these large omnivorous animals stood nearly two meters high, and with ferocious dentition would also have been able to run at great speed. Despite their common name, they may have been more closely related to hippos than pigs.



■ 155

**A LARGE FOSSIL CAVE BEAR**

From the mid to late Pleistocene (circa 27,000 years ago), the tall specimen with finely preserved skull of an *Ursus spelaeus* partially composite and mounted on support stand.

108 x 48 x 54in. (274 x 122 x 137cm.) on stand

£20,000–30,000

\$27,000–40,000

€23,000–34,000

One of the great animals of the last Ice Age, the cave bear had a range across most of Europe and into Russia. Its hibernation in caves gives rise to the name, and explains why skeletal remains are so well preserved. Along with the many other megafauna their extinction happened 27,5000 years ago during the rise of humans and a time of great climate change



■ \* 156

**A SABER-TOOTHED CAT**  
SOUTH DAKOTA

The *Dinictis felina* from the Brule Formation, Oligocene (34-30 million years ago) with finely preserved skull and partially composite skeleton supported on custom iron frame in dynamic pose atop wooden base.  
60 x 51 x 30in. (152 x 130 x 76cm.)

£70,000-100,000

\$94,000-130,000

€80,000-110,000

**PROVENANCE:**

Collected from private land in South Dakota, 2017

Similar in appearance, although not related to *Smilodon* (the saber-toothed tiger) *Dinictis* evolved parallel to them and lived as an apex predator in a similar manner on the plains of ancient North America, and are correctly term "false saber-toothed cats" as their fierce teeth are not quite as large. Part of an extinct family of carnivores the Nimravidae they were not true-cats and walked flat-footed, perhaps as the modern leopard. Their remains are much rarer than the other fauna of the Brule formation upon which they preyed.





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### 6 WITHDRAWAL

Christie's may, at its option, withdraw any **lot** at any time prior to or during the sale of the **lot**. Christie's has no liability to you for any decision to withdraw.

### 7 JEWELLERY

(a) Coloured gemstones (such as rubies, sapphires and emeralds) may have been treated to improve their look, through methods such as heating and oiling. These methods are accepted by the international jewellery trade but may make the gemstone less strong and/or require special care over time.

(b) All types of gemstones may have been improved by some method. You may request a gemmological report for any item which does not have a report if the request is made to us at least three weeks before the date of the auction and you pay the fee for the report.

(c) We do not obtain a gemmological report for every gemstone sold in our auctions. Where we do get gemmological reports from internationally accepted gemmological laboratories, such reports will be described in the catalogue. Reports from American gemmological laboratories will describe any improvement or treatment to the gemstone. Reports from European gemmological laboratories will describe any improvement or treatment only if we request that they do so, but will confirm when no improvement or treatment has been made. Because of differences in approach and technology, laboratories may not agree whether a particular gemstone has been treated, the amount of treatment or whether treatment is permanent. The gemmological laboratories will only report on the improvements or treatments known to the laboratories at the date of the report.

(d) For jewellery sales, **estimates** are based on the information in any gemmological report or, if no report is available, assume that the gemstones may have been treated or enhanced.

## 8 WATCHES & CLOCKS

(a) Almost all clocks and watches are repaired in their lifetime and may include parts which are not original. We do not give a **warranty** that any individual component part of any watch or clock is **authentic**. Watchbands described as 'associated' are not part of the original watch and may not be **authentic**. Clocks may be sold without pendulums, weights or keys.

(b) As collectors' watches and clocks often have very fine and complex mechanisms, a general service, change of battery or further repair work may be necessary, for which you are responsible. We do not give a **warranty** that any watch or clock is in good working order. Certificates are not available unless described in the catalogue.

(c) Most watches have been opened to find out the type and quality of movement. For that reason, watches with water resistant cases may not be waterproof and we recommend you have them checked by a competent watchmaker before use.

Important information about the sale, transport and shipping of watches and watchbands can be found in paragraph H2(g).

## B REGISTERING TO BID

### 1 NEW BIDDERS

(a) If this is your first time bidding at Christie's or you are a returning bidder who has not bought anything from any of our salerooms within the last two years you must register at least 48 hours before an auction to give us enough time to process and approve your registration. We may, at our option, decline to permit you to register as a bidder. You will be asked for the following:

(i) for individuals: Photo identification (driving licence, national identity card or passport) and, if not shown on the ID document, proof of your current address (for example, a current utility bill or bank statement).

(ii) for corporate clients: Your Certificate of Incorporation or equivalent document(s) showing your name and registered address together with documentary proof of directors and beneficial owners; and

(iii) for trusts, partnerships, offshore companies and other business structures, please contact us in advance to discuss our requirements.

(b) We may also ask you to give us a financial reference and/or a deposit as a condition of allowing you to bid. For help, please contact our Credit Department on +44 (0)20 7839 9060.

### 2 RETURNING BIDDERS

We may at our option ask you for current identification as described in paragraph B1(a) above, a financial reference or a deposit as a condition of allowing you to bid. If you have not bought anything from any of our salerooms in the last two years or if you want to spend more than on previous occasions, please contact our Credit Department on +44 (0)20 7839 9060.

### 3 IF YOU FAIL TO PROVIDE THE RIGHT DOCUMENTS

If in our opinion you do not satisfy our bidder identification and registration procedures including, but not limited to completing any anti-money laundering and/or anti-terrorism financing checks we may require to our satisfaction, we may refuse to register you to bid, and if you make a successful bid, we may cancel the contract for sale between you and the seller.

### 4 BIDDING ON BEHALF OF ANOTHER PERSON

(a) **As authorised bidder.** If you are bidding on behalf of another person, that person will need to complete the registration requirements above before you can bid, and supply a signed letter authorising you to bid for him/her.

(b) **As agent for an undisclosed principal:** If you are bidding as an agent for an undisclosed principal (the ultimate buyer(s)), you accept personal liability to pay the **purchase price** and all other sums due. Further, you warrant that:

(i) you have conducted appropriate customer due diligence on the ultimate buyer(s) of the lot(s) in accordance with any and all applicable anti-money laundering and sanctions laws, consent to us relying on this due diligence, and you will retain for a period of not less than five years the documentation and records evidencing the due diligence;

(ii) you will make such documentation and records evidencing your due diligence promptly available for immediate inspection by an independent third-party auditor upon our written request to do so. We will not disclose such documentation and records to any third-parties unless (1) it is already in the public domain, (2) it is required to be disclosed by law, or (3) it is in accordance with anti-money laundering laws;

(iii) the arrangements between you and the ultimate buyer(s) are not designed to facilitate tax crimes;

(iv) you do not know, and have no reason to suspect, that the funds used for settlement are connected with, the proceeds of any criminal activity or that the ultimate buyer(s) are under investigation, charged with or convicted of money laundering, terrorist activities or other money laundering predicate crimes.

A bidder accepts personal liability to pay the **purchase price** and all other sums due unless it has been agreed in writing with Christie's before commencement of the auction that the bidder is acting as an agent on behalf of a named third party acceptable to Christie's and that Christie's will only seek payment from the named third party.

### 5 BIDDING IN PERSON

If you wish to bid in the saleroom you must register for a numbered bidding paddle at least 30 minutes before the auction. You may register online at [www.christies.com](http://www.christies.com) or in person. For help, please contact the Credit Department on +44 (0)20 7839 9060.

### 6 BIDDING SERVICES

The bidding services described below are a free service offered as a convenience to our clients and Christie's is not responsible for any error (human or otherwise), omission or breakdown in providing these services.

### (a) Phone Bids

Your request for this service must be made no later than 24 hours prior to the auction. We will accept bids by telephone for lots only if our staff are available to take the bids. If you need to bid in a language other than in English, you must arrange this well before the auction. We may record telephone bids. By bidding on the telephone, you are agreeing to us recording your conversations. You also agree that your telephone bids are governed by these Conditions of Sale.

### (b) Internet Bids on Christie's Live™

For certain auctions we will accept bids over the Internet. Please visit [www.christies.com/livebidding](http://www.christies.com/livebidding) and click on the 'Bid Live' icon to see details of how to watch, hear and bid at the auction from your computer. As well as these Conditions of Sale, internet bids are governed by the Christie's LIVE™ terms of use which are available on [www.christies.com](http://www.christies.com).

### (c) Written Bids

You can find a Written Bid Form at the back of our catalogues, at any Christie's office or by choosing the sale and viewing the **lots** online at [www.christies.com](http://www.christies.com). We must receive your completed Written Bid Form at least 24 hours before the auction. Bids must be placed in the currency of the saleroom. The auctioneer will take reasonable steps to carry out written bids at the lowest possible price, taking into account the **reserve**. If you make a written bid on a **lot** which does not have a **reserve** and there is no higher bid than yours, we will bid on your behalf at around 50% of the **low estimate** or, if lower, the amount of your bid. If we receive written bids on a **lot** for identical amounts, and at the auction these are the highest bids on the **lot**, we will sell the **lot** to the bidder whose written bid we received first.

## C AT THE SALE

### 1 WHO CAN ENTER THE AUCTION

We may, at our option, refuse admission to our premises or decline to permit participation in any auction or to reject any bid.

### 2 RESERVES

Unless otherwise indicated, all lots are subject to a **reserve**. We identify **lots** that are offered without **reserve** with the symbol Δ next to the **lot** number. The reserve cannot be more than the **lot's low estimate**.

### 3 AUCTIONEER'S DISCRETION

The auctioneer can act at his sole option:

- (a) refuse any bid;
- (b) move the bidding backwards or forwards in any way he or she may decide, or change the order of the **lots**;
- (c) withdraw any **lot**;
- (d) divide any **lot** or combine any two or more **lots**;
- (e) reopen or continue the bidding even after the hammer has fallen; and
- (f) in the case of error or dispute and whether during or after the auction, to continue the bidding, determine the successful bidder, cancel the sale of the **lot**, or reoffer and resell any **lot**. If any dispute relating to bidding arises during or after the auction, the auctioneer's decision in exercise of this option is final.

### 4 BIDDING

The auctioneer accepts bids from:

- (a) bidders in the saleroom;
- (b) telephone bidders, and internet bidders through 'Christie's LIVE™' (as shown above in Section B6); and
- (c) written bids (also known as absentee bids or commission bids) left with us by a bidder before the auction.

### 5 BIDDING ON BEHALF OF THE SELLER

The auctioneer may, at his or her sole option, bid on behalf of the seller up to but not including the amount of the **reserve** either by making consecutive bids or by making bids in response to other bidders. The auctioneer will not identify these as bids made on behalf of the seller and will not make any bid on behalf of the seller at or above the **reserve**. If **lots** are offered without **reserve**, the auctioneer will generally decide to open the bidding at 50% of the **low estimate** for the **lot**. If no bid is made at that level, the auctioneer may decide to go backwards at his or her sole option until a bid is made, and then continue up from that amount. In the event that there are no bids on a **lot**, the auctioneer may deem such **lot** unsold.

### 6 BID INCREMENTS

Bidding generally starts below the **low estimate** and increases in steps (bid increments). The auctioneer will decide at his or her sole option where the bidding should start and the bid increments. The usual bid increments are shown for guidance only on the Written Bid Form at the back of this catalogue.

### 7 CURRENCY CONVERTER

The saleroom video screens (and Christie's LIVE™) may show bids in some other major currencies as well as sterling. Any conversion is for guidance only and we cannot be bound by any rate of exchange used. Christie's is not responsible for any error (human or otherwise), omission or breakdown in providing these services.

### 8 SUCCESSFUL BIDS

Unless the auctioneer decides to use his or her discretion as set out in paragraph C3 above, when the auctioneer's hammer strikes, we have accepted the last bid. This means a contract for sale has been formed between the seller and the successful bidder. We will issue an invoice only to the registered bidder who made the successful bid. While we send out invoices by post and/or email after the auction, we do not accept responsibility for telling you whether or not your bid was successful. If you have bid by written bid, you should contact us by telephone or in person as soon as possible after the auction to get details of the outcome of your bid to avoid having to pay unnecessary storage charges.

## 9 LOCAL BIDDING LAWS

You agree that when bidding in any of our sales that you will strictly comply with all local laws and regulations in force at the time of the sale for the relevant sale site.

## D THE BUYER'S PREMIUM, TAXES AND ARTIST'S RESALE ROYALTY

### 1 THE BUYER'S PREMIUM

In addition to the **hammer price**, the successful bidder agrees to pay us a **buyer's premium** on the **hammer price** of each **lot** sold. On all **lots** we charge 25% of the **hammer price** up to and including £175,000, 20% on that part of the **hammer price** over £175,000 and up to and including £3,000,000, and 12.5% of that part of the **hammer price** above £3,000,000.

### 2 TAXES

The successful bidder is responsible for any applicable tax including any VAT, sales or compensating use tax or equivalent tax wherever such taxes may arise on the **hammer price** and the **buyer's premium**. It is the buyer's responsibility to ascertain and pay all taxes due. You can find details of how VAT and VAT reclaims are dealt with on the section of the catalogue headed 'VAT Symbols and Explanation'. VAT charges and refunds depend on the particular circumstances of the buyer so this section, which is not exhaustive, should be used only as a general guide. In all circumstances EU and UK law takes precedence. If you have any questions about VAT, please contact Christie's VAT Department on +44 (0)20 7389 9060 (email: VAT\_London@christies.com, fax: +44 (0)20 3219 6076). Christie's recommends you obtain your own independent tax advice.

For **lots** Christie's ships to the United States, a state sales or use tax may be due on the **hammer price**, **buyer's premium** and shipping costs on the **lot**, regardless of the nationality or citizenship of the purchaser. Christie's is currently required to collect sales tax for **lots** it ships to the state of New York. The applicable sales tax rate will be determined based upon the state, county, or locale to which the **lot** will be shipped. Successful bidders claiming an exemption from sales tax must provide appropriate documentation to Christie's prior to the release of the **lot**. For shipments to those states for which Christie's is not required to collect sales tax, a successful bidder may be required to remit use tax to that state's taxing authorities. Christie's recommends you obtain your own independent tax advice with further questions.

### 3 ARTIST'S RESALE ROYALTY

In certain countries, local laws entitle the artist or the artist's estate to a royalty known as 'artist's resale right' when any **lot** created by the artist is sold. We identify these **lots** with the symbol  $\lambda$  next to the **lot** number. If these laws apply to a **lot**, you must pay us an extra amount equal to the royalty. We will pay the royalty to the appropriate authority on the seller's behalf.

The artist's resale royalty applies if the **hammer price** of the **lot** is 1,000 euro or more. The total royalty for any **lot** cannot be more than 12,500 euro. We work out the amount owed as follows:

*Royalty for the portion of the hammer price*

(in euros)

4% up to 50,000

3% between 50,000.01 and 200,000

1% between 200,000.01 and 350,000

0.50% between 350,000.01 and 500,000

over 500,000, the lower of 0.25% and 12,500 euro.

We will work out the artist's resale royalty using the euro to sterling rate of exchange of the European Central Bank on the day of the auction.

## E WARRANTIES

### 1 SELLER'S WARRANTIES

For each **lot**, the seller gives a **warranty** that the seller:

(a) is the owner of the **lot** or a joint owner of the **lot** acting with the permission of the other co-owners or, if the seller is not the owner or a joint owner of the **lot**, has the permission of the owner to sell the **lot**, or the right to do so in law; and

(b) has the right to transfer ownership of the **lot** to the buyer without any restrictions or claims by anyone else.

If either of the above **warranties** are incorrect, the seller shall not have to pay more than the **purchase price** (as defined in paragraph F1(a) below) paid by you to us. The seller will not be responsible to you for any reason for loss of profits or business, expected savings, loss of opportunity or interest, costs, damages, **other damages** or expenses. The seller gives no **warranty** in relation to any **lot** other than as set out above and, as far as the seller is allowed by law, all **warranties** from the seller to you, and all other obligations upon the seller which may be added to this agreement by law, are excluded.

### 2 OUR AUTHENTICITY WARRANTY

We warrant, subject to the terms below, that the **lots** in our sales are authentic (our **authenticity warranty**). If, within five years of the date of the auction, you give notice to us that your **lot** is not **authentic**, subject to the terms below, we will refund the **purchase price** paid by you. The meaning of **authentic** can be found in the glossary at the end of these Conditions of Sale. The terms of the **authenticity warranty** are as follows:

(a) It will be honoured for claims notified within a period of five years from the date of the auction. After such time, we will not be obligated to honour the **authenticity warranty**.

(b) It is given only for information shown in **UPPERCASE type** in the first line of the **catalogue description** (the '**Heading**'). It does not apply to any information other than in the **Heading** even if shown in **UPPERCASE type**.

(c) The **authenticity warranty** does not apply to any **Heading** or part of a **Heading** which is **qualified**. **Qualified** means limited by a clarification in a **lot's catalogue description** or by the use in a **Heading** of one of the terms listed in the section titled **Qualified Headings** on the page of the catalogue headed 'Important Notices and Explanation of Cataloguing Practice'. For example, use of the term 'ATTRIBUTED TO...' in a **Heading** means that the **lot** is in Christie's opinion probably a work by

the named artist but no **warranty** is provided that the **lot** is the work of the named artist. Please read the full list of **Qualified Headings** and a **lot's full catalogue description** before bidding.

(d) The **authenticity warranty** applies to the **Heading** as amended by any **Saleroom Notice**.

(e) The **authenticity warranty** does not apply where scholarship has developed since the auction leading to a change in generally accepted opinion. Further, it does not apply if the **Heading** either matched the generally accepted opinion of experts at the date of the sale or drew attention to any conflict of opinion.

(f) The **authenticity warranty** does not apply if the **lot** can only be shown not to be **authentic** by a scientific process which, on the date we published the catalogue, was not available or generally accepted for use, or which was unreasonably expensive or impractical, or which was likely to have damaged the **lot**.

(g) The benefit of the **authenticity warranty** is only available to the original buyer shown on the invoice for the **lot** issued at the time of the sale and only if, on the date of the notice of claim, the original buyer is the full owner of the **lot** and the **lot** is free from any claim, interest or restriction by anyone else. The benefit of this **authenticity warranty** may not be transferred to anyone else.

(h) In order to claim under the **authenticity warranty**, you must:

(i) give us written notice of your claim within five years of the date of the auction. We may require full details and supporting evidence of any such claim;

(ii) at Christie's option, we may require you to provide the written opinions of two recognised experts in the field of the **lot** mutually agreed by you and us in advance confirming that the **lot** is not **authentic**. If we have any doubts, we reserve the right to obtain additional opinions at our expense; and

(iii) return the **lot** at your expense to the saleroom from which you bought it in the **condition** it was in at the time of sale.

(i) Your only right under this **authenticity warranty** is to cancel the sale and receive a refund of the **purchase price** paid by you to us. We will not, in any circumstances, be required to pay you more than the **purchase price** nor will we be liable for any loss of profits or business, loss of opportunity or value, expected savings or interest, costs, damages, **other damages** or expenses.

(j) **Books**. Where the **lot** is a book, we give an additional **warranty** for 14 days from the date of the sale that if on collation any **lot** is defective in text or illustration, we will refund your **purchase price**, subject to the following terms:

(a) This additional **warranty** does not apply to:

(i) the absence of blanks, half titles, tissue guards or advertisements, damage in respect of bindings, stains, spotting, marginal tears or other defects not affecting completeness of the text or illustration;

(ii) drawings, autographs, letters or manuscripts, signed photographs, music, atlases, maps or periodicals;

(iii) books not identified by title;

(iv) **lots** sold without a printed estimate;

(v) **books** which are described in the catalogue as sold not subject to return; or

(vi) defects stated in any **condition** report or announced at the time of sale.

(b) To make a claim under this paragraph you must give written details of the defect and return the **lot** to the saleroom at which you bought it in the same **condition** as at the time of sale, within 14 days of the date of the sale.

(k) **South East Asian Modern and Contemporary Art and Chinese Calligraphy and Painting**.

In these categories, the **authenticity warranty** does not apply because current scholarship does not permit the making of definitive statements. Christie's does, however, agree to cancel a sale in either of these two categories of art where it has been proven the **lot** is a forgery. Christie's will refund to the original buyer the purchase price in accordance with the terms of Christie's authenticity warranty, provided that the original buyer notifies us with full supporting evidence documenting the forgery claim within twelve (12) months of the date of the auction. Such evidence must be satisfactory to us that the **lot** is a forgery in accordance with paragraph E2(h)(ii) above and the **lot** must be returned to us in accordance with E2(h)(iii) above. Paragraphs E2(b), (c), (d), (e), (f) and (g) and (i) also apply to a claim under these categories.

## F PAYMENT

### 1 HOW TO PAY

(a) Immediately following the auction, you must pay the **purchase price** being:

(i) the **hammer price**; and

(ii) the **buyer's premium**; and

(iii) any amounts due under section D3 above; and

(iv) any duties, goods, sales, use, compensating or service tax or VAT.

Payment is due no later than by the end of the seventh calendar day following the date of the auction (the '**due date**').

(b) We will only accept payment from the registered bidder. Once issued, we cannot change the buyer's name on an invoice or re-issue the invoice in a different name. You must pay immediately even if you want to export the **lot** and you need an export licence.

(c) You must pay for **lots** bought at Christie's in the United Kingdom in the currency stated on the invoice in one of the following ways:

(i) Wire transfer

You must make payments to:

Lloyds Bank Plc, City Office, PO Box 217, 72 Lombard Street, London EC3P 3BT. Account number: 00172710, sort code: 30-00-02 Swift code: LOYDGB2LCTY. IBAN (international bank account number): GB81 LOYD 3000 0200 1727 10.

(ii) Credit Card.

We accept most major credit cards subject to certain conditions. You may make payment via credit card in person. You may also make a 'cardholder not present' (CNP) payment by calling Christie's Post-Sale Services Department on +44 (0)20 7752 3200 or for some sales, by logging into your MyChristie's account by going to: [www.christies.com/mychristies](http://www.christies.com/mychristies). Details of the conditions and restrictions applicable

to credit card payments are available from our Post-Sale Services Department, whose details are set out in paragraph (e) below.

If you pay for your purchase using a credit card issued outside the region of the sale, depending on the type of credit card and account you hold, the payment may incur a cross-border transaction fee. If you think this may apply to you, please check with your credit card issuer before making the payment.

Please note that for sales that permit online payment, certain transactions will be ineligible for credit card payment.

(iii) Cash

We accept cash subject to a maximum of £5,000 per buyer per year at our Cashier's Department only (subject to conditions).

(iv) Banker's draft

You must make these payable to Christie's and there may be conditions.

(v) Cheque

You must make cheques payable to Christie's. Cheques must be from accounts in pounds sterling from a United Kingdom bank.

(d) You must quote the sale number, lot number(s), your invoice number and Christie's client account number when making a payment. All payments sent by post must be sent to: Christie's, Cashiers Department, 8 King Street, St James's, London, SW1Y 6QT.

(e) For more information please contact our Post-Sale Service Department by phone on +44 (0)20 7752 3200 or fax on +44 (0)20 752 3300.

## 2. TRANSFERRING OWNERSHIP TO YOU

You will not own the **lot** and ownership of the **lot** will not pass to you until we have received full and clear payment of the **purchase price**, even in circumstances where we have released the **lot** to the buyer.

## 3 TRANSFERRING RISK TO YOU

The risk in and responsibility for the **lot** will transfer to you from whichever is the earlier of the following:

(a) When you collect the **lot**; or

(b) At the end of the 30th day following the date of the auction or, if earlier, the date the **lot** is taken into care by a third party warehouse as set out on the page headed 'Storage and Collection', unless we have agreed otherwise with you in writing.

## 4 WHAT HAPPENS IF YOU DO NOT PAY

(a) If you fail to pay us the **purchase price** in full by the **due date**, we will be entitled to do one or more of the following (as well as enforce our rights under paragraph F5 and any other rights or remedies we have by law):

(i) to charge interest from the **due date** at a rate of 5% a year above the UK Lloyds Bank base rate from time to time on the unpaid amount due;

(ii) we can cancel the sale of the **lot**. If we do this, we may sell the **lot** again, publicly or privately on such terms we shall think necessary or appropriate, in which case you must pay us any shortfall between the **purchase price** and the proceeds from the resale. You must also pay all costs, expenses, losses, damages and legal fees we have to pay or may suffer and any shortfall in the seller's commission on the resale;

(iii) we can pay the seller an amount up to the net proceeds payable in respect of the amount bid by your default in which case you acknowledge and understand that Christie's will have all of the rights of the seller to pursue you for such amounts;

(iv) we can hold you legally responsible for the **purchase price** and may begin legal proceedings to recover it together with other losses, interest, legal fees and costs as far as we are allowed by law;

(v) we can take what you owe us from any amounts which we or any company in the **Christie's Group** may owe you (including any deposit or other part-payment which you have paid to us);

(vi) we can, at our option, reveal your identity and contact details to the seller;

(vii) we can reject at any future auction any bids made by or on behalf of the buyer or to obtain a deposit from the buyer before accepting any bids;

(viii) to exercise all the rights and remedies of a person holding security over any property in our possession owned by you, whether by way of pledge, security interest or in any other way as permitted by the law of the place where such property is located. You will be deemed to have granted such security to us and we may retain such property as collateral security for your obligations to us; and

(ix) we can take any other action we see necessary or appropriate.

(b) If you owe money to us or to another **Christie's Group** company, we can use any amount you do pay, including any deposit or other part-payment you have made to us, or which we owe you, to pay off any amount you owe to us or another **Christie's Group** company for any transaction.

(c) If you make payment in full after the **due date**, and we choose to accept such payment we may charge you storage and transport costs from the date that is 30 calendar days following the auction in accordance with paragraphs Gd(i) and (ii). In such circumstances paragraph Gd(iv) shall apply.

## 5 KEEPING YOUR PROPERTY

If you owe money to us or to another **Christie's Group** company, as well as the rights set out in F4 above, we can use or deal with any of your property we hold or which is held by another **Christie's Group** company in any way we are allowed to by law. We will only release your property to you after you pay us or the relevant **Christie's Group** company in full for what you owe. However, if we choose, we can also sell your property in any way we think appropriate. We will use the proceeds of the sale against any amounts you owe us and we will pay any amount left from that sale to you. If there is a shortfall, you must pay us any difference between the amount we have received from the sale and the amount you owe us.



## G COLLECTION AND STORAGE

(a) We ask that you collect purchased **lots** promptly following the auction (**but note that you may not collect any lot until you have made full and clear payment of all amounts due to us**).

(b) Information on collecting **lots** is set out on the storage and collection page and on an information sheet which you can get from the bidder registration staff or Christie's Post-Sale Services Department on +44 (0)20 7752 3200.

(c) If you do not collect any **lot** promptly following the auction we can, at our option, remove the **lot** to another Christie's location or an affiliate or third party warehouse.

(d) If you do not collect a **lot** by the end of the 30th day following the date of the auction, unless otherwise agreed in writing:

(i) we will charge you storage costs from that date.

(ii) we can at our option move the **lot** to or within an affiliate or third party warehouse and charge you transport costs and administration fees for doing so.

(iii) we may sell the **lot** in any commercially reasonable way we think appropriate.

(iv) the storage terms which can be found at [christies.com/storage](http://christies.com/storage) shall apply.

(v) Nothing in this paragraph is intended to limit our rights under paragraph F4.

## H TRANSPORT AND SHIPPING

### 1 TRANSPORT AND SHIPPING

We will enclose a transport and shipping form with each invoice sent to you. You must make all transport and shipping arrangements. However, we can arrange to pack, transport and ship your property if you ask us to and pay the costs of doing so. We recommend that you ask us for an **estimate**, especially for any large items or items of high value that need professional packing before you bid. We may also suggest other handlers, packers, transporters or experts if you ask us to do so. For more information, please contact Christie's Art Transport on +44 (0)20 7839 9060. See the information set out at [www.christies.com/shipping](http://www.christies.com/shipping) or contact us at [arttransport\\_london@christies.com](mailto:arttransport_london@christies.com). We will take reasonable care when we are handling, packing, transporting and shipping a **lot**. However, if we recommend another company for any of these purposes, we are not responsible for their acts, failure to act or neglect.

### 2 EXPORT AND IMPORT

Any lot sold at auction may be affected by laws on exports from the country in which it is sold and the import restrictions of other countries. Many countries require a declaration of export for property leaving the country and/or an import declaration on entry of property into the country. Local laws may prevent you from importing a lot or may prevent you selling a lot in the country you import it into. We will not be obliged to cancel your purchase and refund the **purchase price** if your **lot** may not be exported, imported or it is seized for any reason by a government authority. It is your responsibility to determine and satisfy the requirements of any applicable laws or regulations relating to the export or import of any **lot** you purchase.

(a) You alone are responsible for getting advice about and meeting the requirements of any laws or regulations which apply to exporting or importing any **lot** prior to bidding. If you are refused a licence or there is a delay in getting one, you must still pay us in full for the **lot**. We may be able to help you apply for the appropriate licences if you ask us to and pay our fee for doing so. However, we cannot guarantee that you will get one.

For more information, please contact Christie's Art Transport Department on +44 (0)20 7839 9060. See the information set out at [www.christies.com/shipping](http://www.christies.com/shipping) or contact us at [arttransport\\_london@christies.com](mailto:arttransport_london@christies.com).

#### (b) Lots made of protected species

**Lots** made of or including (regardless of the percentage) endangered and other protected species of wildlife are marked with the symbol in the catalogue. This material includes, among other things, ivory, tortoiseshell, crocodile skin, rhinoceros horn, whalebone, certain species of coral, and Brazilian rosewood. You should check the relevant customs laws and regulations before bidding on any **lot** containing wildlife material if you plan to import the **lot** into another country. Several countries refuse to allow you to import property containing these materials, and some other countries require a licence from the relevant regulatory agencies in the countries of exportation as well as importation. In some cases, the **lot** can only be shipped with an independent scientific confirmation of species and/or age and you will need to obtain these at your own cost. If a **lot** contains elephant ivory, or any other wildlife material that could be confused with elephant ivory (for example, mammoth ivory, walrus ivory, helmeted hornbill ivory), please see further important information in paragraph (c) if you are proposing to import the **lot** into the USA. We will not be obliged to cancel your purchase and refund the **purchase price** if your **lot** may not be exported, imported or it is seized for any reason by a government authority. It is your responsibility to determine and satisfy the requirements of any applicable laws or regulations relating to the export or import of property containing such protected or regulated material.

#### (c) US import ban on African elephant ivory

The USA prohibits the import of ivory from the African elephant. Any **lot** containing elephant ivory or other wildlife material that could be easily confused with elephant ivory (for example, mammoth ivory, walrus ivory, helmeted hornbill ivory) can only be imported into the US with results of a rigorous scientific test acceptable to Fish & Wildlife, which confirms that the material is not African elephant ivory. Where we have conducted such rigorous scientific testing on a **lot** prior to sale, we will make this clear in the lot description. In all other cases, we cannot confirm whether a **lot** contains African elephant ivory, and you will buy that **lot** at your own risk and be responsible for any scientific test or other reports required for import into the USA at your own cost. If such scientific test is inconclusive or confirms the material is from the African elephant, we will not be obliged to cancel your purchase and refund the **purchase price**.

#### (d) Lots of Iranian origin

Some countries prohibit or restrict the purchase and/or import of Iranian-origin 'works of conventional craftsmanship' (works that are not by a recognised artist and/or that have a function, for example: bowls, ewers, tiles, ornamental boxes). For example, the USA prohibits the import of this type of property and its purchase by US persons (wherever located). Other countries, such as Canada, only permit the import of this property in certain circumstances. As a convenience to buyers, Christie's indicates under the title of a **lot** if the **lot** originates from Iran (Persia). It is your responsibility to ensure you do not bid on or import a **lot** in contravention of the sanctions or trade embargoes that apply to you.

#### (e) Gold

Gold of less than 18ct does not qualify in all countries as 'gold' and may be refused import into those countries as 'gold'.

#### (f) Jewellery over 50 years old

Under current laws, jewellery over 50 years old which is worth £39,219 or more will require an export licence which we can apply for on your behalf. It may take up to eight weeks to obtain the export jewellery licence.

#### (g) Watches

Many of the watches offered for sale in this catalogue are pictured with straps made of endangered or protected animal materials such as alligator or crocodile. These lots are marked with the symbol in the catalogue. These endangered species straps are shown for display purposes only and are not for sale. Christie's will remove and retain the strap prior to shipment from the sale site. At some sale sites, Christie's may, at its discretion, make the displayed endangered species strap available to the buyer of the **lot** free of charge if collected in person from the sale site within one year of the date of the sale. Please check with the department for details on a particular **lot**.

For all symbols and other markings referred to in paragraph H2, please note that **lots** are marked as a convenience to you, but we do not accept liability for errors or for failing to mark **lots**.

## I OUR LIABILITY TO YOU

(a) We give no **warranty** in relation to any statement made, or information given, by us or our representatives or employees, about any **lot** other than as set out in the **authenticity warranty** and, as far as we are allowed by law, all **warranties** and other terms which may be added to this agreement by law are excluded. The seller's **warranties** contained in paragraph E1 are their own and we do not have any liability to you in relation to those **warranties**.

(b) (i) We are not responsible to you for any reason (whether for breaking this agreement or any other matter relating to your purchase of, or bid for, any **lot**) other than in the event of fraud or fraudulent misrepresentation by us or other than as expressly set out in these Conditions of Sale; or

(ii) We do not give any representation, **warranty** or guarantee or assume any liability of any kind in respect of any **lot** with regard to merchantability, fitness for a particular purpose, description, size, quality, condition, attribution, authenticity, rarity, importance, medium, provenance, exhibition history, literature, or historical relevance. Except as required by local law, any **warranty** of any kind is excluded by this paragraph.

(c) In particular, please be aware that our written and telephone bidding services, Christie's LIVE™, **condition** reports, currency converter and saleroom video screens are free services and we are not responsible to you for any error (human or otherwise), omission or breakdown in these services.

(d) We have no responsibility to any person other than a buyer in connection with the purchase of any **lot**.

(e) If, in spite of the terms in paragraphs (a) to (d) or E2(i) above, we are found to be liable to you for any reason, we shall not have to pay more than the **purchase price** paid by you to us. We will not be responsible to you for any reason for loss of profits or business, loss of opportunity or value, expected savings or interest, costs, damages, or expenses.

## J OTHER TERMS

### 1 OUR ABILITY TO CANCEL

In addition to the other rights of cancellation contained in this agreement, we can cancel a sale of a **lot** if we reasonably believe that completing the transaction is, or may be, unlawful or that the sale places us or the seller under any liability to anyone else or may damage our reputation.

### 2 RECORDINGS

We may videotape and record proceedings at any auction. We will keep any personal information confidential, except to the extent disclosure is required by law. However, we may, through this process, use or share these recordings with another **Christie's Group** company and marketing partners to analyse our customers and to help us to tailor our services for buyers. If you do not want to be videotaped, you may make arrangements to make a telephone or written bid or bid on Christie's LIVE™ instead. Unless we agree otherwise in writing, you may not videotape or record proceedings at any auction.

### 3 COPYRIGHT

We own the copyright in all images, illustrations and written material produced by or for us relating to a **lot** (including the contents of our catalogues unless otherwise noted in the catalogue). You cannot use them without our prior written permission. We do not offer any guarantee that you will gain any copyright or other reproduction rights to the **lot**.

### 4 ENFORCING THIS AGREEMENT

If a court finds that any part of this agreement is not valid or is illegal or impossible to enforce, that part of the agreement will be treated as being deleted and the rest of this agreement will not be affected.

## 5 TRANSFERRING YOUR RIGHTS AND RESPONSIBILITIES

You may not grant a security over or transfer your rights or responsibilities under these terms on the contract of sale with the buyer unless we have given our written permission. This agreement will be binding on your successors or estate and anyone who takes over your rights and responsibilities.

## 6 TRANSLATIONS

If we have provided a translation of this agreement, we will use this original version in deciding any issues or disputes which arise under this agreement.

## 7 PERSONAL INFORMATION

We will hold and process your personal information and may pass it to another **Christie's Group** company for use as described in, and in line with, our privacy notice at [www.christies.com/about-us/contact/privacy](http://www.christies.com/about-us/contact/privacy).

## 8 WAIVER

No failure or delay to exercise any right or remedy provided under these Conditions of Sale shall constitute a waiver of that or any other right or remedy, nor shall it prevent or restrict the further exercise of that or any other right or remedy. No single or partial exercise of such right or remedy shall prevent or restrict the further exercise of that or any other right or remedy.

## 9 LAW AND DISPUTES

This agreement, and any non-contractual obligations arising out of or in connection with this agreement, or any other rights you may have relating to the purchase of a **lot** will be governed by the laws of England and Wales. Before we or you start any court proceedings (except in the limited circumstances where the dispute, controversy or claim is related to proceedings brought by someone else and this dispute could be joined to those proceedings), we agree we will each try to settle the dispute by mediation following the Centre for Effective Dispute Resolution (CEDR) Model Mediation Procedure. We will use a mediator affiliated with CEDR who we and you agree to. If the dispute is not settled by mediation, you agree for our benefit that the dispute will be referred to and dealt with exclusively in the courts of England and Wales. However, we will have the right to bring proceedings against you in any other court.

## 10 REPORTING ON WWW.CHRISTIES.COM

Details of all **lots** sold by us, including **catalogue descriptions** and prices, may be reported on [www.christies.com](http://www.christies.com). Sales totals are **hammer price plus buyer's premium** and do not reflect costs, financing fees, or application of buyer's or seller's credits. We regret that we cannot agree to requests to remove these details from [www.christies.com](http://www.christies.com).

## K GLOSSARY

**authentic:** a genuine example, rather than a copy or forgery of:

(i) the work of a particular artist, author or manufacturer, if the **lot** is described in the **Heading** as the work of that artist, author or manufacturer;

(ii) a work created within a particular period or culture, if the **lot** is described in the **Heading** as a work created during that period or culture;

(iii) a work for a particular origin source if the **lot** is described in the **Heading** as being of that origin or source; or

(iv) in the case of gems, a work which is made of a particular material, if the **lot** is described in the **Heading** as being made of that material.

**authenticity warranty:** the guarantee we give in this agreement that a **lot** is **authentic** as set out in section E2 of this agreement.

**buyer's premium:** the charge the buyer pays us along with the **hammer price**.

**catalogue description:** the description of a **lot** in the catalogue for the auction, as amended by any saleroom notice.

**Christie's Group:** Christie's International Plc, its subsidiaries and other companies within its corporate group.

**condition:** the physical **condition** of a **lot**.

**due date:** has the meaning given to it in paragraph F1(a).

**estimate:** the price range included in the catalogue or any saleroom notice within which we believe a **lot** may sell. **Low estimate** means the lower figure in the range and **high estimate** means the higher figure. The **mid estimate** is the midpoint between the two.

**hammer price:** the amount of the highest bid the auctioneer accepts for the sale of a **lot**.

**Heading:** has the meaning given to it in paragraph E2.

**lot:** an item to be offered at auction (or two or more items to be offered at auction as a group).

**other damages:** any special, consequential, incidental or indirect damages of any kind or any damages which fall within the meaning of 'special', 'incidental' or 'consequential' under local law.

**purchase price:** has the meaning given to it in paragraph F1(a).

**provenance:** the ownership history of a **lot**.

**qualified:** has the meaning given to it in paragraph E2 and **Qualified Headings** means the section headed **Qualified Headings** on the page of the catalogue headed **Important Notices and Explanation of Cataloguing Practice**.

**reserve:** the confidential amount below which we will not sell a **lot**.

**saleroom notice:** a written notice posted next to the **lot** in the saleroom and on [www.christies.com](http://www.christies.com), which is also read to prospective telephone bidders and notified to clients who have left commission bids, or an announcement made by the auctioneer either at the beginning of the sale, or before a particular lot is auctioned.

**UPPER CASE type:** means having all capital letters.

**warranty:** a statement or representation in which the person making it guarantees that the facts set out in it are correct.

# VAT SYMBOLS AND EXPLANATION

You can find a glossary explaining the meanings of words coloured in bold on this page at the end of the section of the catalogue headed 'Conditions of Sale' VAT payable

Symbol	
No Symbol	We will use the VAT Margin Scheme. No VAT will be charged on the <b>hammer price</b> . VAT at 20% will be added to the <b>buyer's premium</b> but will not be shown separately on our invoice.
†	We will invoice under standard VAT rules and VAT will be charged at 20% on both the <b>hammer price</b> and <b>buyer's premium</b> and shown separately on our invoice.
θ	For qualifying books only, no VAT is payable on the <b>hammer price</b> or the <b>buyer's premium</b> .
*	These <b>lots</b> have been imported from outside the EU for sale and placed under the Temporary Admission regime. Import VAT is payable at 5% on the <b>hammer price</b> . VAT at 20% will be added to the <b>buyer's premium</b> but will not be shown separately on our invoice.
Ω	These <b>lots</b> have been imported from outside the EU for sale and placed under the Temporary Admission regime. Customs Duty as applicable will be added to the <b>hammer price</b> and Import VAT at 20% will be charged on the Duty Inclusive <b>hammer price</b> . VAT at 20% will be added to the <b>buyer's premium</b> but will not be shown separately on our invoice.
α	The VAT treatment will depend on whether you have registered to bid with an EU or non-EU address: <ul style="list-style-type: none"> <li>• If you register to bid with an address <b>within</b> the EU you will be invoiced under the VAT Margin Scheme (see No Symbol above).</li> <li>• If you register to bid with an address <b>outside</b> of the EU you will be invoiced under standard VAT rules (see † symbol above)</li> </ul>
‡	For wine offered 'in bond' only. If you choose to buy the wine in bond no Excise Duty or Clearance VAT will be charged on the <b>hammer</b> . If you choose to buy the wine out of bond Excise Duty as applicable will be added to the <b>hammer price</b> and Clearance VAT at 20% will be charged on the Duty inclusive <b>hammer price</b> . Whether you buy the wine in bond or out of bond, 20% VAT will be added to the buyer's premium and shown on the invoice.

## VAT refunds: what can I reclaim?

If you are:

<b>A non VAT registered UK or EU buyer</b>		<b>No VAT refund is possible</b>
<b>UK VAT registered buyer</b>	No symbol and α	<b>The VAT amount in the buyer's premium cannot be refunded.</b> However, on request we can re-invoice you outside of the VAT Margin Scheme under normal UK VAT rules (as if the <b>lot</b> had been sold with a † symbol). Subject to HMRC's rules, you can then reclaim the VAT charged through your own VAT return.
	* and Ω	Subject to HMRC's rules, you can reclaim the Import VAT charged on the <b>hammer price</b> through your own VAT return when you are in receipt of a C79 form issued by HMRC. The VAT amount in the <b>buyer's premium</b> is invoiced under Margin Scheme rules so cannot normally be claimed back. However, if you request to be re-invoiced outside of the Margin Scheme under standard VAT rules (as if the <b>lot</b> had been sold with a † symbol) then, subject to HMRC's rules, you can reclaim the VAT charged through your own VAT return.
<b>EU VAT registered buyer</b>	No Symbol and α	<b>The VAT amount in the buyer's premium cannot be refunded.</b> However, on request we can <b>re-invoice</b> you outside of the VAT Margin Scheme under normal UK VAT rules (as if the <b>lot</b> had been sold with a † symbol). See below for the rules that would then apply.
	†	If you provide us with your EU VAT number we will not charge VAT on the <b>buyer's premium</b> . We will also refund the VAT on the <b>hammer price</b> if you ship the <b>lot</b> from the UK and provide us with proof of shipping, within three months of collection.
	* and Ω	<b>The VAT amount on the hammer and in the buyer's premium cannot be refunded.</b> However, on request we can <b>re-invoice</b> you outside of the VAT Margin Scheme under normal UK VAT rules (as if the <b>lot</b> had been sold with a † symbol). See above for the rules that would then apply.
<b>Non EU buyer</b>		If you meet <b>ALL</b> of the conditions in notes 1 to 3 below we will refund the following tax charges:
	No Symbol	We will refund the VAT amount in the <b>buyer's premium</b> .
	† and α	We will refund the VAT charged on the hammer price. VAT on the buyer's premium can only be refunded if you are an overseas business. The VAT amount in the buyer's premium cannot be refunded to non-trade clients.
	‡ (wine only)	No Excise Duty or Clearance VAT will be charged on the <b>hammer price</b> providing you export the wine while 'in bond' directly outside the EU using an Excise authorised shipper. VAT on the <b>buyer's premium</b> can only be refunded if you are an overseas business. <b>The VAT amount in the buyer's premium cannot be refunded to non-trade clients.</b>
	* and Ω	We will refund the Import VAT charged on the <b>hammer price</b> and the VAT amount in the <b>buyer's premium</b> .

1. We **CANNOT** offer refunds of VAT amounts or Import VAT to buyers who do not meet all applicable conditions in full. If you are unsure whether you will be entitled to a refund, please contact Client Services at the address below **before you bid**.  
2. No VAT amounts or Import VAT will be refunded where the total refund is under £100.

3. In order to receive a refund of VAT amounts/Import VAT (as applicable) non-EU buyers must:  
(a) have registered to bid with an address outside of the EU; **and**  
(b) provide immediate proof of correct export out of the EU within the required time frames of: 30 days via a 'controlled export' for \* and Ω **lots**. All other **lots** must be exported within three months of collection.

4. Details of the documents which you must provide to us to show satisfactory proof of export/shipping are available from our VAT team at the address below. We charge a processing fee of £35.00 per invoice to check shipping/export documents. We will waive this processing fee if you appoint Christie's Shipping Department to arrange your export/shipping.

5. If you appoint Christie's Art Transport or one of our authorised shippers to arrange your export/shipping we will issue you with an export invoice with the applicable VAT or duties cancelled as outlined above. If you later cancel or change the shipment in a manner that infringes the rules outlined above we will issue a revised invoice charging you all applicable taxes/charges.

6. If you ask us to re-invoice you under normal UK VAT rules (as if the **lot** had been sold with a † symbol) instead of under the Margin Scheme the **lot** may become ineligible to be resold using the Margin Schemes. **Movement within the EU must be within 3 months from the date of sale.** You should take professional advice if you are unsure how this may affect you.

7. All re-invoicing requests must be received within four years from the date of sale. If you have any questions about VAT refunds please contact Christie's Client Services on info@christies.com  
Tel: +44 (0)20 7389 2886.  
Fax: +44 (0)20 7839 1611.



## SYMBOLS USED IN THIS CATALOGUE

The meaning of words coloured in **bold** in this section can be found at the end of the section of the catalogue headed 'Conditions of Sale'.

○

Christie's has a direct financial interest in the **lot**. See Important Notices and Explanation of Cataloguing Practice.

△

Owned by Christie's or another **Christie's Group** company in whole or part. See Important Notices and Explanation of Cataloguing Practice.

◆

Christie's has a direct financial interest in the **lot** and has funded all or part of our interest with the help of someone else. See Important Notices and Explanation of Cataloguing Practice.

λ

Artist's Resale Right. See Section D3 of the Conditions of Sale.

•

**Lot** offered without **reserve** which will be sold to the highest bidder regardless of the pre-sale estimate in the catalogue.

~

**Lot** incorporates material from endangered species which could result in export restrictions. See Section H2(b) of the Conditions of Sale.

ψ

**Lot** incorporates material from endangered species which is shown for display purposes only and is not for sale. See Section H2(g) of the Conditions of Sale.

?, \*, Ω, α, #, +

See VAT Symbols and Explanation.

■

See Storage and Collection Page.

Please note that **lots** are marked as a convenience to you and we shall not be liable for any errors in, or failure to, mark a **lot**.

## IMPORTANT NOTICES

### CHRISTIE'S INTEREST IN PROPERTY CONSIGNED FOR AUCTION

#### △ **Property Owned in part or in full by Christie's**

From time to time, Christie's may offer a **lot** which it owns in whole or in part. Such property is identified in the catalogue with the symbol △ next to its **lot** number.

#### ○ **Minimum Price Guarantees**

On occasion, Christie's has a direct financial interest in the outcome of the sale of certain lots consigned for sale. This will usually be where it has guaranteed to the Seller that whatever the outcome of the auction, the Seller will receive a minimum sale price for the work. This is known as a minimum price guarantee. Where Christie's holds such financial interest we identify such **lots** with the symbol ○ next to the **lot** number.

#### ○◆ **Third Party Guarantees/Irrevocable bids**

Where Christie's has provided a Minimum Price Guarantee it is at risk of making a loss, which can be significant, if the **lot** fails to sell. Christie's therefore sometimes chooses to share that risk with a third party. In such cases the third party agrees prior to the auction to place an irrevocable written bid on the **lot**. The third party is therefore committed to bidding on the **lot** and, even if there are no other bids, buying the **lot** at the level of the written bid unless there are any higher bids. In doing so, the third party takes on all or part of the risk of the **lot** not being sold. If the **lot** is not sold, the third party may incur a loss. **Lots** which are subject to a third party guarantee arrangement are identified in the catalogue with the symbol ○◆.

In most cases, Christie's compensates the third party in exchange for accepting this risk. Where the third party is the successful bidder, the third party's remuneration is based on a fixed financing fee. If the third party is not the successful bidder, the remuneration may either be based on a fixed fee or an amount calculated against the final **hammer price**. The third party may also bid for the **lot** above the written bid. Where the third party is the successful bidder, Christie's will report the final **purchase price** net of the fixed financing fee.

Third party guarantors are required by us to disclose to anyone they are advising their financial interest in any **lots** they are guaranteeing. However, for the avoidance of any doubt, if you are advised by or bidding through an agent on a **lot** identified as being subject to a third party guarantee you should always ask your agent to confirm whether or not he or she has a financial interest in relation to the **lot**.

### Other Arrangements

Christie's may enter into other arrangements not involving bids. These include arrangements where Christie's has given the Seller an Advance on the proceeds of sale of the **lot** or where Christie's has shared the risk of a guarantee with a partner without the partner being required to place an irrevocable written bid or otherwise participating in the bidding on the **lot**. Because such arrangements are unrelated to the bidding process they are not marked with a symbol in the catalogue.

### Bidding by parties with an interest

In any case where a party has a financial interest in a **lot** and intends to bid on it we will make a saleroom announcement to ensure that all bidders are aware of this. Such financial interests can include where beneficiaries of an Estate have reserved the right to bid on a **lot** consigned by the Estate or where a partner in a risk-sharing arrangement has reserved the right to bid on a **lot** and/or notified us of their intention to bid.

Please see <http://www.christies.com/financial-interest/> for a more detailed explanation of minimum price guarantees and third party financing arrangements.

Where Christie's has an ownership or financial interest in every **lot** in the catalogue, Christie's will not designate each **lot** with a symbol, but will state its interest in the front of the catalogue.

### POST 1950 FURNITURE

All items of post-1950 furniture included in this sale are items either not originally supplied for use in a private home or now offered solely as works of art. These items may not comply with the provisions of the Furniture and Furnishings (Fire) (Safety) Regulations 1988 (as amended in 1989 and 1993, the 'Regulations'). Accordingly, these items should not be used as furniture in your home in their current condition. If you do intend to use such items for this purpose, you must first ensure that they are reupholstered, restuffed and/or recovered (as appropriate) in order that they comply with the provisions of the Regulations.

# STORAGE AND COLLECTION

## COLLECTION LOCATION AND TERMS

Specified **lots** (sold and unsold) marked with a filled square (■) not collected from Christie's by 5.00pm on the day of the sale will, at our option, be removed to Christie's Park Royal. Christie's will inform you if the **lot** has been sent offsite. Our removal and storage of the **lot** is subject to the terms and conditions of storage which can be found at [Christies.com/storage](http://Christies.com/storage) and our fees for storage are set out in the table below - these will apply whether the **lot** remains with Christie's or is removed elsewhere.

If the **lot** is transferred to Christie's Park Royal, it will be available for collection from 12 noon on the second business day following the sale.

Please call Christie's Client Service 24 hours in advance to book a collection time at Christie's Park Royal. All collections from Christie's Park Royal will be by pre-booked appointment only.

Tel: +44 (0)20 7839 9060

Email: [cscollectionsuk@christies.com](mailto:cscollectionsuk@christies.com).

If the **lot** remains at Christie's it will be available for collection on any working day 9.00am to 5.00pm. **Lots** are not available for collection at weekends.

## PAYMENT OF ANY CHARGES DUE

**ALL lots** whether sold or unsold will be subject to storage and administration fees. Please see the details in the table below. Storage Charges may be paid in advance or at the time of collection. **Lots** may only be released on production of the 'Collection Form' from Christie's. **Lots** will not be released until all outstanding charges are settled.

## SHIPPING AND DELIVERY

Christie's Post-Sale Service can organise local deliveries or international freight. Please contact them on +44 (0)20 7752 3200 or [PostSaleUK@christies.com](mailto:PostSaleUK@christies.com). To ensure that arrangements for the transport of your lot can be finalised before the expiry of any free storage period, please contact Christie's Post-Sale Service for a quote as soon as possible after the sale.

## PHYSICAL LOSS & DAMAGE LIABILITY

Christie's will accept liability for physical loss and damage to sold **lots** whilst in storage. Christie's liability will be limited to the invoice purchase price including buyers' premium. Christie's liability will continue until the **lots** are collected by you or an agent acting for you following payment in full. Christie's liability is subject to Christie's Terms and Conditions of Liability posted on [www.christies.com](http://www.christies.com).

ADMINISTRATION FEE, STORAGE & RELATED CHARGES		
CHARGES PER LOT	LARGE OBJECTS E.g. Furniture, Large Paintings & Sculpture	SMALL OBJECTS E.g. Books, Luxury, Ceramics, Small Paintings
1-30 days after the auction	Free of Charge	Free of Charge
31st day onwards: Administration Fee	£70.00	£35.00
Storage per day	£8.00	£4.00
Loss & Damage Liability	Will be charged on purchased lots at 0.5% of the hammer price or capped at the total storage charge, whichever is the lower amount.	
All charges are subject to VAT. Please note that there will be no charge to clients who collect their lots within 30 days of this sale. Size to be determined at Christie's discretion.		

## CHRISTIE'S PARK ROYAL

Unit 7, Central Park  
Acton Lane  
London NW10 7FY

Vehicle access via Central Park only.

## COLLECTION FROM CHRISTIE'S PARK ROYAL

Please note that the opening hours for Christie's Park Royal are Monday to Friday 9.00am to 5.00pm and lots transferred are not available for collection at weekends.



11/10/17





A GEORGE III MINIATURE ORRERY  
PROBABLY BY JOHN & EDWARD TROUGHTON FOR ROBERT NEWMAN, CIRCA 1800  
£70,000-£100,000

**THE EXCEPTIONAL SALE**

*London, 5 July 2018*

**VIEWING**

30 June - 5 July 2018  
8 King Street  
London SW1Y 6QT

**CONTACT**

James Hyslop  
jhyslop@christies.com  
+44 (0)20 7752 3205

Other fees apply in addition to the hammer price. See Section D of our Conditions of Sale at the back of the Auction Catalogue

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# CHRISTIE'S

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