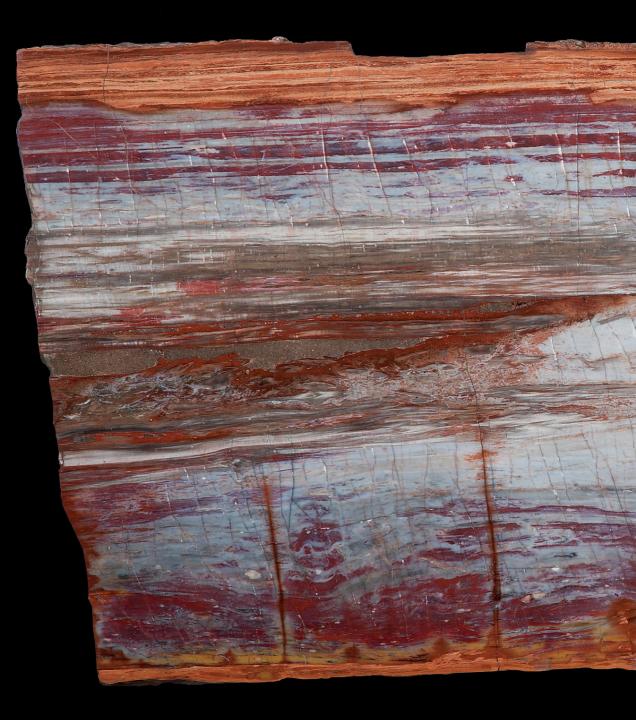
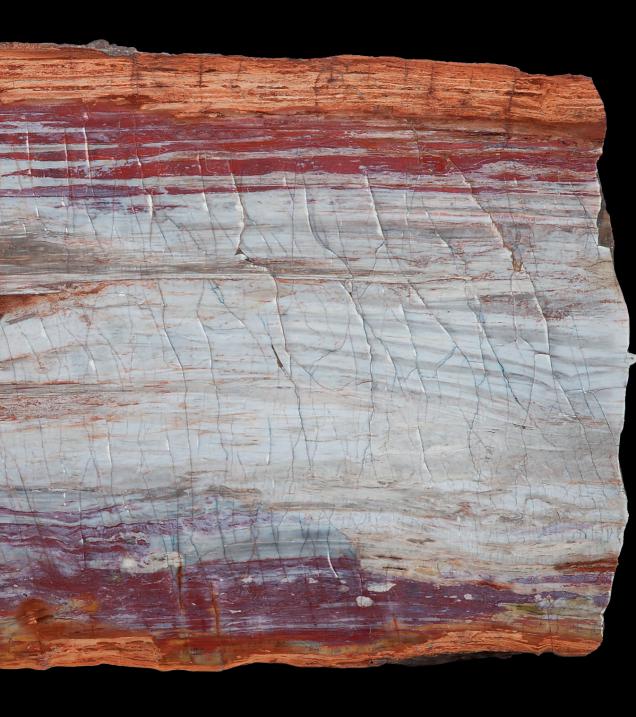


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INTERNATIONAL PRINTED BOOKS AND MANUSCRIPTS & SCIENTIFIC INSTRUMENTS DEPARTMENTS

INTERNATIONAL HEAD OF GROUP

Margaret Ford Tel: +44 (0)20 7389 2150

INTERNATIONAL MANAGING DIRECTOR - BOOKS AND SCIENCE AND WORLD ART

Daniel Gallen Tel +44 (0)20 7389 2590

INTERNATIONAL DIRECTOR

Francis Wahlgren Tel: +1 212 636 2661

INTERNATIONAL CONSULTANT

Felix de Marez Oyens Tel: +33 1 40 76 85 58

BOOKS AND MANUSCRIPTS

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NEW YORK

Francis Wahlgren Chris Coover Ian Ehling Gretchen Hause Tel: +1 212 636 2665

PARIS

Isabelle de Conihout Patricia de Fougerolle Philippine de Sailly Emilie Fabre (Bande Désinée) Tel: +33 (0)1 40 76 85 99

SCIENTIFIC INSTRUMENTS AND NATURAL HISTORY

SOUTH KENSINGTON

James Hyslop Tel: +44 (0)20 7752 3205

BUSINESS MANAGERS

Regional Managing Director New York

Ross Elgie Tel: +1 212 636 2641

London

Julia Grant Tel:+44 (0)207 752 3113

France

Marie Faiola Tel: +33 (0)1 40 76 86 10

01/09/16

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HISTORY

SOUTH KENSINGTON

1-10 NOVEMBER MAPPING THE GLOBE ONLINE SALE

19 NOVEMBER BANDE DÉSSINÉE

PARIS

30 NOVEMBER
THE GIANCARLO
BELTRAME LIBRARY
OF SCIENTIFIC BOOKS
PART II

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BOOKS AND
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James Hyslop



Julian Wilson



Robert Tyrwhitt

SCIENCE & NATURAL HISTORY WEDNESDAY 19 OCTOBER 2016

AUCTION

Wednesday 19 October 2016 at 10.30 am Lots 1-223 85 Old Brompton Road London SW7 3LD

AUCTION CODE AND NUMBER

In sending absentee bids or making enquiries, this sale should be referred to as **CELESTITE-12052**

VIEWING

Saturday 15 October Sunday 16 October Monday 17 October Tuesday 18 October

AUCTIONEERS

Kate Flitcroft and Nick Orchard

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Please refer to the important notice on page 153. 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.

11.00 am - 5.00 pm 11.00 am - 5.00 pm 9.00 am - 7.30 pm 9.00 am - 5.00 pm

SPECIALISTS

James Hyslop (Head of Department) Tel: +44 (0)20 7752 3205 Julian Wilson (Books) Tel: +44 (0)20 7389 2157

BUSINESS MANAGER

Julia Grant Tel: +44 (0)20 7752 3113

SALE COORDINATOR

Robert Tyrwhitt Tel: +44 (0)20 7389 2151

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Front cover: Lot 23 Inside front cover: Lot 59 Page 160: Lot 71 (detail) Inside back cover: Lot 67 (detail) Back cover: Lot 158

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[15]

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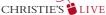
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FOSSILS AND MINERALS (LOTS 1-174)



A SLICE OF PETRIFIED WOOD MADAGASCAR

Araucaria sp. from the Triassic (circa 225 million years ago) 16½in. (42cm.) wide

€1,500-2,500

\$2,300-3,800 €2,200-3,500



2

A LARGE AMMONITE

MADAGASCAR

Kranaosphinctes rabei from the Jurassic (201-145 million years ago)

20in. (41cm.) diameter

£,2,500-3,500

\$3,800-5,300 €3,600-4,900



3 A FOSSIL SEA URCHIN MOROCCO

Gymnocidaris koechlin from the Bajocian, Jurassic (circa 170 million years ago) 5in. (13cm.) wide

£750-1,250

\$1,200-1,900 €1,100-1,800

4 A FOSSIL CRAB ITALY

Harpactocarcinus sp. from the Eocene (56–38 million years ago) the well preserved specimen with eight legs 9in. (23cm.) wide

€,4,000-6,000

\$6,100-9,000 €5,700-8,400





5 A SPHERE OF ZEBRA JASPER MADAGASCAR the $6\frac{1}{2}$ -inch sphere on a stand £2,500-3,500

\$3,800-5,300 €3,600-4,900



6 A SPECIMEN OF LABRADORITE MADAGASCAR

the front polished side with strong flashes of iridescence 11 1 /2in. (24cm.) high

£1,500-2,500

\$2,300-3,800 €2,200-3,500

0



7 A SPECIMEN OF LABRADORITE

MADAGASCAR

the free form polished on all sides showing iridescence 11in. (28cm.) wide

£2,500-3,500

\$3,800-5,300 €3,600-4,900

8 A RIBBED AMMONITE MADAGASCAR

Euaspidoceras sp. from the Middle Jurassic (174–163 million years ago) on acrylic base 16in. (41cm.) wide

£1,500-2,500

\$2,300-3,800 €2,200-3,500



9 AN ENGLISH IRIDESCENT AMMONITE SOMERSET

Caloceras johnstoni from the Hettangian, Jurassic (circa 200 million years ago) 12in. (31cm.) wide

£1,000−1,500

\$1,600-2,300 €1,500-2,100



9

10 A LARGE POLISHED AMMONITE

MADAGASCAR

Douvilleiceras sp. from the Cretaceous (145-66 million years ago) 15in. (38cm.) diameter

£3,000-5,000

\$4,600-7,500 €4,300-7,000



•*11 A VERY LARGE MEGALODON TOOTH NORTH CAROLINA, USA

6½ inch tooth of Carcharodon sp. from the Tortonian (12-7 million years ago)

€3,000-5,000

\$4,600-7,500 €4,300-7,000





•*12 A LARGE MEGALODON TOOTH NORTH CAROLINA, USA

6 inch *Carcharodon sp.* from the Tortonian (12-7 million years ago) 7in. (18cm.) tall on stand

£1,000-1,200

\$1,600-1,800 €1,500-1,700





13 A FOSSIL STAR FISH PLAQUE MOROCCO

specimens of *Protopaleaster sp.* from the Ordovician (485-443 million years ago) in their original matrix supported on stand 23in. (59cm.) wide

£800-1,200

\$1,300-1,800 €1,200-1,700 AN ICHTHYOSAUR PADDLE
LYME REGIS

from the early Jurassic (200–175 million years ago), the 10-inch long right fore-limb of an *Ichthyosaurus sp.* 11 x 17 $\frac{1}{2}$ in. (28.5 x 45cm.)

£1,000-1,500

\$1,600-2,300 €1,500-2,100



A SPECIMEN OF CALCITE HUNAN, CHINA of natural form 6½in. (16.5cm.) long

€2,000-3,000

A QUARTZ CLUSTER MINAS GERAIS, BRAZIL of natural form 23in. (58cm.) wide £2,000-3,000

\$3,100-4,500 €2,900-4,200



\$3,100-4,500

€2,900-4,200

17 A SPECIMEN OF QUARTZ BRAZIL

of bowl form, cut from one piece and polished 15in. (38cm.) wide

£,1,500-2,500

\$2,300-3,800 €2,200-3,500





18 THREE QUARTZ SPHERES BRAZIL

the largest with 4-inch diameter 4in. (10cm.) diameter

£,700-1,000

\$1,100-1,500 €980-1,400

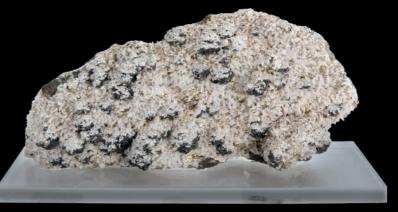
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19 PYRITE WITH QUARTZ PERU

the crystals of quartz snowflaking around the pyrite, on fitted stand. 16in. (41cm.) wide

£1,000-1,500

\$1,600-2,300 €1,500-2,100





20 SPECIMENS OF FOSSILIZED SCALLOPS

SOUTHERN FRANCE

Pecten maximus from the Miocene (23-5 million years ago) the specimens of up to 6½-inch long 23 x 21in. (58 x 53cm.)

€,1,000-1,500

\$1,600-2,300 €1,500-2,100

20

■21 SPECIMENS OF FOSSILIZED SCALLOPS

SOUTHERN FRANCE

Pecten maximus from the Miocene (23-5 million years ago) supported on marble base 21in. (53cm.) wide

£1,000-1,500

\$1,600-2,300 €1,500-2,100



2



22

A LARGE PLAQUE OF FOSSILIZED SCALLOPS

SOUTHERN FRANCE

Pecten maximus up to 6½-inches long, from the Miocene (23-5 million years ago) 50 x 39 x 11in. (127 x 99 x 28cm.)

£5,000-8,000

\$7,600-12,000 €7,100-11,000

Preserved in their final pose, these fossil *Pectens*, are the ancestors of today's modern (edible) scallop. Their surrounding host rock has been carved away to reveal their detail.

GOGOTTES (LOTS 23-27)

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



23 A GOGOTTE FORMATION FONTAINEBLEAU, FRANCE

of natural form, from the Oligocene (circa 30 million years ago) 12in. (30cm.) high

£,3,500-5,500

\$5,300-8,300 €5,000-7,700



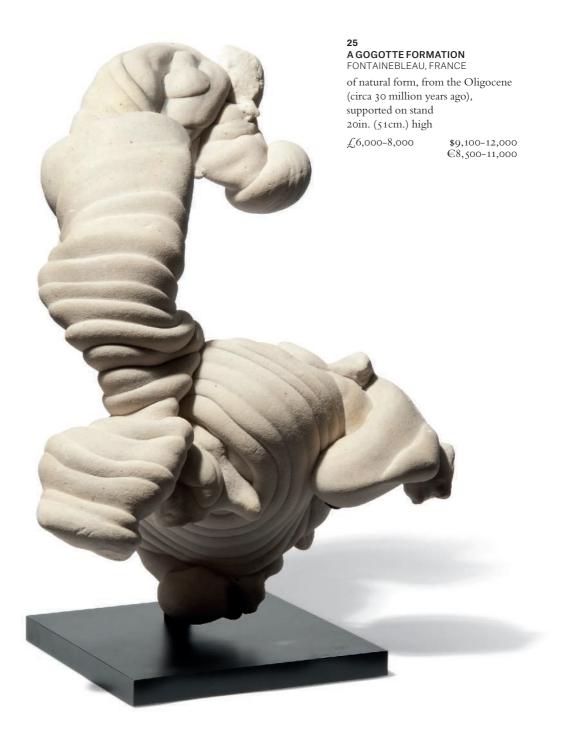
24 A GOGOTTE FORMATIONFONTAINEBLEAU, FRANCE

of natural form, from the Oligocene (circa 30 million years ago), supported on stand $\,$

22in. (56cm.) high

£3,000-5,000

\$4,600-7,500 €4,300-7,000





26 A GOGOTTE FORMATIONFONTAINEBLEAU, FRANCE

of natural form, from the Oligocene (circa 30 million years ago) 17in. (44cm.) high

£2,000-3,000

\$3,100-4,500 €2,900-4,200



■ 27 A LARGE GOGOTTE FORMATION FONTAINEBLEAU, FRANCE

of natural form with many layers of concretions 21 in. (54 cm.) high

£6,000-9,000

\$9,100-14,000 €8,500-13,000



28

AN INTACT ELEPHANT BIRD EGG

MADAGASCAR, PRE-17TH CENTURY

a complete egg of an $Aepyornis\ maximus$, some material can be heard rattling inside the egg

111/4in. (281/2cm.)

£,40,000-60,000

\$61,000-90,000 €57,000-84,000

The Elephant Bird was thought to be the giant flying beast known as the Roc (or Ruhk) in the tales of Sinbad and accounts of Marco Polo's voyages. The bird grew to around 10 or 11 feet in height and whilst probably unable to devour an elephant, as the Roc was reputed to do, it certainly was the largest bird ever to have lived. It was estimated to weigh up to 1100lbs (the largest ostriches might grow to 8 feet in height and weigh 300lbs).

The birds are thought to have gone extinct between the 14th and 17th centuries.





*29 A SMALL ORIENTED CHELYABINSK METEORITE LL5

CHELYABINSKAYA OBLAST, RUSSIA (54°49′ N, 61°07′ E) While this is a modestly sized oriented meteorite compared to the previous lot, every feature of orientation is evident: parabolic cone, flow lines, regmaglypts, an ablation lip and evidence of bubbling on the reverse. On the obverse an evocation of a face similar to the character Kuato in the film *Total Recall*.

39 x 37 x 17mm (1½ x 1½ x 1/2 in.) 45.1g

£,2,000-3,000

\$3,100-4,500 €2,900-4,200

LITERATURE:

Klotz, I. (2014), "Russian Meteor: Chelyabinsk Asteroid Had Violent Past." *Discovery*. Accessed November 5, 2015.

Dorminey, B. (2015), "NASA Surprised By Chelyabinsk Russian Meteor Fragments." *Forbes*. Accessed November 5, 2015 This is a smaller oriented meteorite from the Chelyabink meteorite shower—and as is the case with the previous lot, less than 1% of all meteorites exhibit this degree of orientation. As a result of the damage created by Chelyabinsk, scientists are racing to come up with a comprehensive global strategy to protect Earth from a larger bombardment. About 13,000 Near-Earth Objects (NEOs) like the Chelyabinsk parent body have been discovered to date; nearly 900 of them are a kilometer in diameter or larger. More than 1600 of these bodies have been officially classified as "Potentially Hazardous Asteroids." Chelyabinsk is a member of the least-common ordinary-chondrite group—the LL chondrites. It wandered through interplanetary space for a scant 1 million years, which suggests that Chelyabinsk was derived from the recent disruption of a small Earth-crossing asteroid that was itself broken off the main LL parent asteroid in the more-distant past. During one or more of these collisional events, Chelyabinsk was significantly shocked; pools of impact melt have been documented in numerous specimens.



*30 NWA 108 — THE MAIN MASS OF A SAHARAN METEORITE THE INTERIOR AND EXTERIOR REVEALED

L6

SAHARA DESERT, NORTH WEST AFRICA

This trapezoidal-shaped specimen exhibits a variegated tan to milk chocolate matrix featuring three unusually large light-colored inclusions. About 80% of the reverse is covered in fusion crust with terrestrialized fractured surfaces. Accompanied by a custom armature.

193 x 203 x 85mm (7½ x 8 x 3½in.)
5.68kg (12.5lbs)

£,3,000-5,000

\$4,600-7,500 €4,300-7,000

PROVENANCE:

Philip C. Mani Collection

To enable scientists to refer to the unique attributes of a given meteorite, there must be a nomenclature system, and so a committee of scientists name meteorites after the location to which they've been "delivered," (e.g., a city, village, mountain, river, county, etc.). In a desert, where there are few distinguishing geological features, meteorites are named after a grid encompassing a restricted area and are assigned a sequential number.

As can be inferred from its very low number, the meteorite now offered is among the earliest meteorite recoveries since the advent of the grid system in 1999. NWA 108 is an L6 chondrite, indicating that it has a relatively low amount of iron and has been extensively metamorphosed on its parent asteroid. Its chondrules were recrystallized and the constituent minerals became compositionally uniform. This is the main mass of NWA 108, i.e., it is the largest portion of this meteorite in existence. The warm, earthy hues seen in the matrix are the result of *terrestrialization* (exposure to the elements as for an extended period of time).



*31 STRATHMORE METEORITE — THICK SLAB FROM A 1917 SCOTTISH FIREBALL

16

PERTHSHIRE, SCOTLAND (56°35' N, 3°15' W)

With two edges of fusion crust along with one cut and one crenulated edge, a creamy matrix is accented by terrestrial tinting along with fresh metal scattered throughout. Modern cutting.

57 x 57 x 9mm (2½ x 2¼ x ⅓ inches) 95.9 grams

£7,000-10,000

\$11,000-15,000 €9,900-14,000

PROVENANCE:

Natural History Museum, London

Following the appearance of a brilliant fireball on December 3, 1917 that entered the atmosphere east of Dunbar, Scotland and passed over Fife and the Sidlaws Hills where it broke apart in the sky, four stones weighing a total of approximately 13 kg were recovered. Three of the stones were found in Perthshire at Easter Essendy, Carsie and Keithick, and one stone in Forfarshire at South Corston. As indicated by the L6 designation, Strathmore has a moderately low amount of iron for a chondritic meteorite and its chondrules have been extensively recrystallized when the rock was metamorphosed on its parent asteroid. During this heating process, the mineral grains became compositionally uniform. Nearly 10 kg of Strathmore is at the National Museum of Scotland, where it is most likely to remain.



32 A SPECIMEN OF PICTURE SANDSTONE

UTAH, USA

the carved form from the Shinarump formation

15in. (41cm.) high

£,1,500-2,500

\$2,300-3,800 €2,200-3,500

33 THREE SPECIMENS OF ORBICULAR JASPER

MADAGASCAR

of spherical form

5in. (13cm.) largest (3)

£,1,000-1,500 \$1,600-2,300 €1,500-2,100





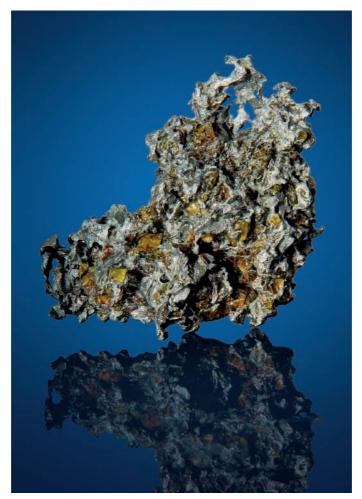
A LARGE AGATE SLICE BRAZIL

polished on both sides, maintaining texture to circumference, supported on acrylic stand

19in. (49cm.) wide

€,800-1,200

\$1,300-1,800 €1,200-1,700



*35
AN ADMIRE METEORITE NODULE
DISCOVERED LYON COUNTY, KANSAS, 1881
the specimen shows the green clusters of olivine, embedded in a metallic iron-nickel mass 3½in. (9cm.) long

\$4,600-7,500 €4,300-7,000 Admire is a pallasite formed at the core-mantle boundary of an asteroid that melted about 4.5 billion years ago. Deep inside the asteroid, molten metal from the top of the core mixed with olivine grains (a magnesium-rich silicate mineral) that had crystallized from the mantle and were pulled downwards, towards the core, by the body's modest gravity. Things remained quiet for Admire until a major collision shattered the asteroid roughly 100 million years ago; this event and subsequent, less energetic collisions set some of the pallasites on a collision course with Earth. The first piece of Admire to be found was ploughed up in Lyon County, Kansas in 1881.

£3,000-5,000



*36

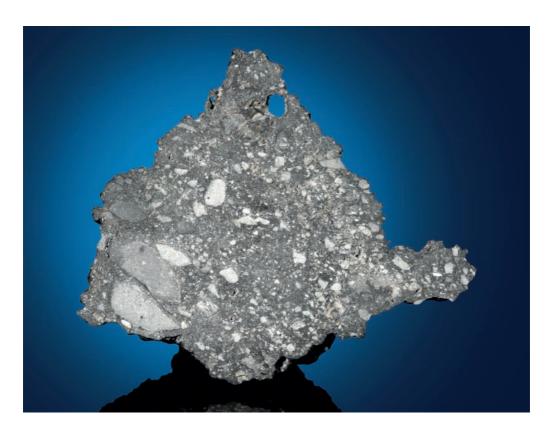
A CUBE OF MUONIONALUSTA METEORITE
DISCOVERED IN NORBOTTEN, SWEDEN, 1906; MODERN CUTTING

the cut surfaces displaying features a resplendent fine-grained Widmanstätten pattern, the product of the solid-state intergrowth of two different iron-nickel minerals – kamacite and taenite

3in. (7.5cm.) wide

£,5,000-9,000

\$7,600-14,000 €7,100-13,000



*37 NWA 8306 — INTERIOR AND EXTERIOR OF A MOON ROCK WITH NATURAL HOLE

LUNAR METEORITE (FELDSPATHIC, REGOLITHIC BRECCIA) SAHARA DESERT, NORTH WEST AFRICA

The cut face evidences a galaxy of inclusions, the result of the ongoing pulverizing of the Moon's surface by meteorite impacts prior to the collision responsible for launching this rock to Earth. The highly textured reverse is a result of natural sandblasting by desert winds over a period of centuries. Numerous variables such as the angle at which this rock sat on the desert floor, the direction of the wind and idiosyncrasies of the material itself (allowing softer components to erode out), produced the holes in what is a singular and noteworthy specimen of the Moon. 121 x 101 x 39mm ($4\frac{3}{4}$ x 4 x $1\frac{1}{2}$ in.) 305g

£60,000-120,000

\$91,000-180,000 €85,000-170,000

This is a unique end piece of a lunar meteorite, a rock that was ejected from the lunar surface following an asteroid impact. The Moon is among the rarest substances on Earth; there are less than 135 kilograms

known to exist and just 0.4% of all meteorites are of lunar origin. As was mentioned in previous descriptions, Moon rocks are identified by specific textural, mineralogical, chemical and radiation signatures. Many of the common minerals found on Earth's surface are rare on the Moon and some lunar minerals are unknown on Earth. NWA 8306, the 8306th meteorite to be catalogued following its recovery in the Northwest African grid of the Sahara Desert, is a fine example of 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. What sets this specimen apart, however, is that it contains naturally formed holes; these are a sought-after rarity in meteorites, and 99.9% of the time they occur only in iron meteorites. It is virtually unheard of that a naturally formed hole is seen in a stony meteorite—and such is the case in this exceptional sample of the Moon. NWA 8306 was classified by Dr. Anthony Irving, among the world's foremost classifiers of planetary material.



*38 A SPECIMEN OF BOTRYOIDAIL FLUORITE ON QUARTZ CHINA

of natural form from Dongqiyishan Fluorite deposit, Alxa League, China, the deep blue crystals of fluorite on top of white quartz 8in. (20cm.) wide

£,7,000-10,000

\$11,000-15,000 €9,900-14,000

The quartz has a "candle" type formation with many smaller terminations leading toward the top terminations resembling the manner in which a candle drips wax as it burns. The multi-generations of fluorite crystals appear to have grown cubically and then modified into dodecahedrons that now resemble blueberries. A fine example.



*39 CRYSTALLINE GOLD ON QUARTZ TUOLUMNE COUNTY, CALIFORNIA

of natural form, from "the Mother Lode", GG claim, the gold on quartz host matrix

4in. (10cm.) long

£15,000-25,000

\$23,000-38,000 €22,000-35,000



•*41
FLUORITE CRYSTALS WITH SPHALERITE
TENNESSEE, USA

of natural form, from Elmwood Mine, Carthage, Central Tennessee Ba-F-Pb-Zn District, Smith Co., the brilliant purple crystals of fluorite with a light etching 3½in. (8.3cm.) wide

£1,000-1,500

\$1,600-2,300 €1,500-2,100



of natural form, from Goboboseb Mountain, Brandberg area, Brandberg District, Erongo Region, the sceptre sharp and lustrous with a cocoa brown colour 3½in. (9cm.) high

£500-800

\$760-1,200 €700-1,100



41



42 RHODOCHROSITE COLORADO, USA

of natural form, from the Sweet Home Mine, Mount Bross, Alma District, Park Co., numerous cherry red rhombohedrons of rhodochrosite, over a terminated Quartz crystals and lavender fluorite cubes 3in. (8cm.) wide

€,3,000-5,000

\$4,600-7,500 €4,300-7,000

42



*43 A SPECIMEN OF "BISBEE" AZURITE ARIZONA. USA

of natural form, Copper Queen Mine, Bisbee, Warren District, Mule Mts, Cochise Co., bubbling microcrystalline azurite dotted with light green malachite 5½in. (13.5cm.) high

£,2,500-3,500

\$3,800-5,300 €3,600-4,900

A rare mineral, the mine from which it came has been closed for half a century. The rich royal blue colour indicates that this is indeed an early specimen from this famed mining district.



*44 A SPECIMEN OF CORNETITE

of natural form, from the Star of the Congo Mine, Katanga, rich, intensely blackish blue to a rich teal blue and bright, lustrous rosettes cover the display side of this specimen.

61/4in. (16cm.) wide

£4,000-6,000

\$6,100-9,000 €5,700-8,400

This relatively rare copper phosphate reaches its zenith at the Star of Congo Mine – and occurs in such quality nowhere else on earth. These micro-crystals combine to form little crystal balls with an incredible sparkle. This specimen has excellent aesthetics and is in remarkably fine condition. The intensity of the colour marks it as being from the now-famous find of the 1998 pocket of this "best of" material, brought out at the time by the Belgian dealer Gilbert Gauthier.



•*45 A SPECIMEN OF CAVANSITE ON STILBITE INDIA

of natural form, from Pune District, Maharashtra 4½in. (11cm.) high

£800-1,200

\$1,300-1,800 €1,200-1,700



•*46 A SPECIMEN OF AMAZONITE **ETHIOPIA**

of natural form, the large group of parallel crystals from Kenticha Mine, Sidamo-Borana Province, 5in. (13cm.) wide

€,600-900

\$910-1,400 €840-1,300



*47 A SPECIMEN OF AQUAMARINE BRAZIL

of natural form, a single, tall aquamarine crystal from Doce Valley, Minas Gerais

51/4in. (13.5cm.) long

£6,000-9,000

\$9,100-14,000 €8,500-13,000

A rare survival: the high amount "gem grade" material in this piece would usually have seen it selected for cutting into one or more gemstones to be used in jewellery, had it not been rescued by a mineral enthusiast.

*48 A CELESTITE GEODE MADAGASCAR

of concave form, a fine specimen from Sakoany mine, Katsepy Commune, Mitsinjo Department, Boeny Region, Mahajanga Province, 11in. (28cm.) wide

£3,500-4,500

\$5,300-6,800 €5,000-6,300





*49 A STALACTITE OF CALCITE ON QUARTZ INDIA

of natural form, from Paldhi, Jalgaon District, Maharashtra 9in. (23cm.) high

£1,500-2,500

\$2,300-3,800 €2,200-3,500



•*50 A QUARTZ SPECIMEN INDIA

of natural form, from Paldhi, Jalgaon District, Maharashtra,

8¾in. (22cm.) high

£1,500-2,500

\$2,300-3,800 €2,200-3,500

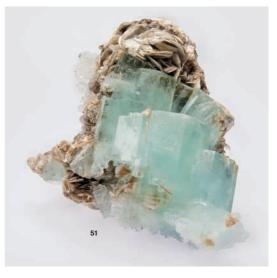
50

*51 A SPECIMEN OF AQUAMARINE PAKISTAN

of natural form, a grouping of intergrown blue aquamarine crystals situated on a bed of muscovite mica, from Gilgit-Baltistan 61/4in. (16cm.) high

£1,500-2,500

\$2,300-3,800 €2,200-3,500



*52 A DOUBLY TERMINATED CRYSTAL OF AQUAMARINE PAKISTAN

of natural form, on muscovite from Nagar, Hunza Valley, Gilgit District, 3½in. (9cm.) wide

€4,000-6,000

\$6,100-9,000 €5,700-8,400

This barrel-shaped, example of a gem aquamarine crystal was collected in the 1990s and exemplifies crystallographic perfection of the sharp hexagonal shape, perfect symmetries, and lovely colour. It has no damage, and is complete all around. Perched perfectly on a small amount of natural matrix to make a natural pedestal for display.





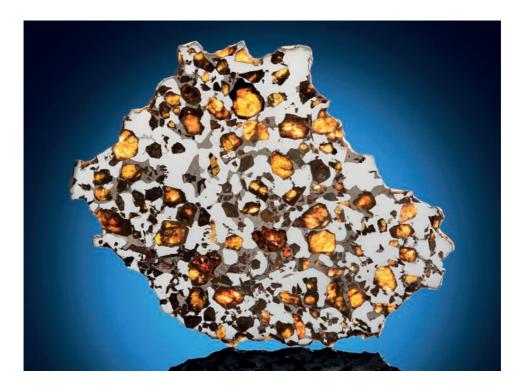
53 A SPECIMEN OF MALACHITE AND SHATTUCKITENAMIBIA

of natural form, the malachite bridging across the quartz grouping, from Kaokoveld Mine, Kaokoveld Plateau, Kunene Region,

3in. (8cm.) wide

£2,500-3,500

\$3,800-5,300 €3,600-4,900



*54 GLORIETA MOUNTAIN PALLASITE — A SUPERB COMPLETE SLICE FROM THE SCHONER MASS

STONY-IRON - PAL-ANOM

GLORIETA MOUNTAIN, NEW MEXICO

This specimen features the signature sulfide inclusions of this meteorite along with crystals of olivine and *peridot* (the semi-precious birthstone of August) suspended in a highly polished metallic matrix. This is among the finest complete slices of the Glorieta Mountain pallasite known to exist.

203 x 169 x 3mm (8 x 63/3 x 1/sin.) 357g

£,6,000-9,000

\$9,100-14,000 €8,500-13,000

PROVENANCE:

Steve Schoner Meteorite Collection, Clyde Tombaugh House, Flagstaff, Arizona

The complete slice of Glorieta Mountain now offered was adjacent to the slice whose image served as the frontispiece of the *Cambridge Encyclopedia of Meteorites*. Less than 0.2% of all meteorites are pallasites — the

most resplendent of all meteorites — and Glorieta Mountain is the most famous American pallasite. In 1965 the "Father of Meteoritics", Harvey Nininger, befriended a teenaged Steve Schoner and informed him of the small meteorites found on Glorieta Mountain in northern New Mexico. Years later, Schoner's recovery of tiny pallasitic fragments fueled his belief in the existence of a far larger mass — a Holy Grail to meteorite enthusiasts. After seventy searches of two to three weeks each over a period of 15 years, Schoner's efforts finally paid off. The stunning specimen now offered is from the 20 kg meteorite recovered by Schoner. As a result of the material lost from cutting, grinding and polishing, only 11 kg of fine specimens from this historic mass exist. While pallasites are extremely rare, Glorieta Mountain is rarer still because it is chemically and morphologically anomalous. It also has a relatively high abundance of iron sulfide (the mineral troilite), leading researchers to classify Glorieta as an anomalous member of the main pallasite group.





(detail)

*55 AN IRIDESCENT AMMONITE CANADA

the 10½ inch *Placenticeras costatum* from the upper Cretaceous, Bearpaw formation (75-72 million years ago), showing strong iridescences of red, orange, green, purple

30 x 23½in. (76 x 61cm.)

£,15,000-25,000

\$23,000-38,000 €22,000-35,000

The opal like iridescence of these ammonites from Alberta, Canada has been termed ammolite and since 1981 has had the status of a gemstone. The shimmering, metallic colours were caused by the combination of millions of years of compression and the mineralization of iron, copper and silica which precipitated from volcanic ash. The opalescent layers of colour are particularly prized in the Chinese philosophical system of Feng-Shui.

The ammonites are a group of 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). The sequence of events that famously killed off the dinosaurs also drove the ammonites to extinction.



■*56 A LARGE FOSSIL FISH PLAQUE GREEN RIVER WYOMING

from the Eocene (circa 50 million years ago), the panel with 35 placed fossil fish of various species, the largest a $Diplomystus\ dentatus$ 54 x 42in. (138 x 107cm.)

£3,500-5,000

\$5,300-7,500 €5,000-7,000



*57
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 24½ x 16½in. (75 x 42 cm.)

£,4,000-6,000

\$6,100-9,000 €5,700-8,400

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.

58 A FOSSIL FISH AND LEAF PLAQUEGREEN RIVER, WYOMING

from the Eocene (circa 50 million years ago) the *Diplomystus dentatus* with a *Priscara sp.* naturally overlying a branch of a *Populus sp.* (?) $47 \times 18\%$ in. (120 $\times 47.5$ cm.)

£,6,000-8,000

\$9,100-12,000 €8,500-11,000



59

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, on two supporting stands

59 x 33 x 22in. (150 x 84 x 56cm.)

€18,000-25,000

\$28,000-38,000 €26,000-35,000

LITERATURE:

cf. Dernbach, U., Petrified Forests (Heppenheim: 1996).

Please see the front endpapers for an alternative view of this lot



60 AN AGATE GEODE BRAZIL

cut and polished to one side 16½in. (42cm.) wide

£,800-1,200

\$1,300-1,800 €1,200-1,700



61 SPECIMENS OF PETRIFIED WOOD INDONESIA

the eight polished spheres of various sizes, the largest 6½-inches diameter

6½in. (16cm.) diameter the largest

€2,000-3,000

\$3,100-4,500 €2,900-4,200

(8)



62 APOPHYLLITE SPECIMEN

NASHIK, INDIA

mounted vertically on custom acrylic base 9in. (23cm.) high

€,700-1,000

\$1,100-1,500 €980-1,400



63 A CRYSTAL OF CALCITE

MADAGASCAR

The 5-inch crystal rhombohedron exhibiting double diffraction, supported on custom stand 6in. (15cm.) high

£,700-1,000

\$1,100-1,500 €980-1,400



65 A SPECIMEN OF QUARTZ

the crystal with prismatic inclusion and natural point, on fitted stand

10in. (25½cm.) high

€,700-1,000

\$1,100-1,500 €980-1,400



64 **PYRITE**

SPAIN

the three clusters of cubic crystals free from matrix 4½in. (4cm.) wide (3) €,700-1,000

\$1,100-1,500 €980-1,400





*66 TRAVIS COUNTY (A) A MASSIVE COMPLETE SLICE OF A TEXAN METEORITE CHONDRITE - H5

TRAVIS COUNTY, TEXAS (30°18' N, 97°42' W)

Cut from the largest of the Travis County (a) masses, now offered is one of the two largest complete slices of this storied Texan meteorite. This large-format slice is festooned with endless metallic flakes as well as numerous dark inclusions scattered throughout the matrix. The outer rim has extensive patches of fusion crust. 463 x 377 x 5mm (181/4 x 143/4 x 1/8in.) 3.50kg (7.7lbs)

£,5,000-8,000

\$7,600-12,000 €7,100-11,000

PROVENANCE:

The Oscar Monnig Collection, Texas Christian University, Fort Worth, Texas Philip C. Mani Collection

Travis County meteorites found their way into scientific literature when Dr. R. T. Hill of the University of Texas received a 2.5 kg fragmentary mass that he donated to the Smithsonian in 1889. The fragment originated from a ranch in Travis County, home to the state capitol of Austin as well as the university where he worked. Nearly forty years later, celebrated meteorite hunter Oscar Monnig met Dr. Hill and was able to trace the specimen donated to the Smithsonian to the Sunset Ranch in Leander, Texas. Unfortunately, just where the meteorite was found had been long forgotten, so Monnig organized a search of the area and soon located numerous additional masses totaling more than 100 kg. All were believed to have originated from the same event, but in 1995 it was determined — ironically by another Smithsonian researcher that about 20% of the specimens were of a different meteorite that just happened to fall in the same area and were thus given the name "Travis County (b)."



PARTIAL SLICE OF NWA 8257 — THE RAW INGREDIENTS OF THE PLANETS

LL3 (PROVISIONAL)
SAHARA DESERT, NORTH WEST
AFRICA

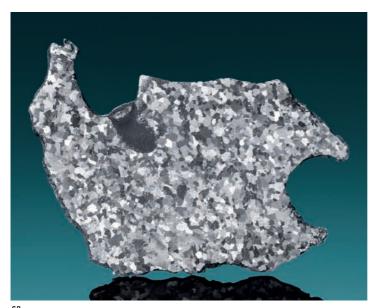
This partial slice contains an abundance of densely packed chondrules with variable textures held together by fine-grained silicate matrix material (compacted nebular dust dating from the earliest stages of solar-system history). The matrix is extremely fresh and is delimited by three cut edges and a natural rim. 99 x 79 x 2mm (3¾ x 3 x 1/sin.) 78.2g

£,1,500-2,500

*67

\$2,300-3,800 €2,200-3,500

For further information on this lot please visit www.christies.com



*68 COMPLETE SLICE OF WILLAMETTE METEORITE

IRON - IIIAB

CLACKAMAS COUNTY, OREGON (45°22' N, 122°35' W)

Willamette's signature recrystallized matrix is contrasted by the smooth, curved rim of the meteorite's exterior. A nodule of troilite with never before seen metallic embayments is in evidence near the top left.

119 x 76 x 1mm ($4\frac{2}{3}$ x 3 x $\frac{1}{8}$ inches) 80 grams

£,4,000-6,000

\$6,100-9,000 €5,700-8,400

PROVENANCE:

American Museum of Natural History, New York City

For further information on this lot please visit www.christies.com

*69

DRONINO — EXTRATERRESTRIAL MINIMALIST SCULPTURAL FORM

IRON, ATAXITE (UNGROUPED)

RYAZAN DISTRICT, RUSSIA (54° 44′ N, 41° 25′ E)

Accompanied by a custom armature, this is a most uncommon meteorite.

189 x 158 x 57mm (7½ x 6¼ x 2¼in.) 5.75kg (12.6lbs)

£,4,000-6,000

\$6,100-9,000 €5,700-8,400

LITERATURE:

Oshtrakh, M., Milder, O., Grokhovsky, V. & Semionkin, V. (2004), "Hyperfine Interactions in Iron Meteorites: Comparative Study by Mossbauer Spectroscopy." *Hyperfine Interactions*, 158(1-4), 365-370

Similar to the previous lot, Dronino is an ungrouped iron meteorite. There is no meteorite that is chemically similar to Dronino, which implies it originated from a previously unknown parent asteroid. This is an unusual specimen as it regards its geometric simplicity. Earth's elements interacted with the meteorite for more than 1000 years, resulting in this minimalist form of two distinct richly textured slopes.

70

A GIBEON METEORITE SPHERE

NAMALAND, NAMIBIA: MODERN CUTTING

This sphere reveals in three dimensions the beautiful *Widmanstätten pattern* that is characteristic of Gibeon specimens

3½in. (9.5cm.) diameter

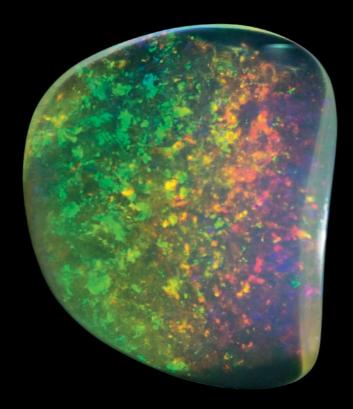
£,7,000-10,000

\$11,000-15,000 €9,900-14,000

Discovered in 1836 by James Edward Alexander (1803-85), a specimen of the Gibeon meteorite was sent to London, where it was confirmed as a meteorite by the astronomer John Herschel (1792-1871). Later research has determined the fall date to have been between 5,000 and 30,000 years ago. Originating from the molten core of an asteroid and after travelling millions of years in interplanetary space, it fell into Earth's upper atmosphere before exploding and raining down over an elliptical strewn field in what is now Namibia. Due to a relatively high nickel content (8%), Gibeon is ductile and not as prone to oxidizing as most other iron meteorites. Only when cut and etched, the fine octahedral intergrowth of a Gibeon's primary alloys is revealed







Ω**71 A SPECIMEN OF OPAL** ETHIOPIA

the 612 carat free form polished on all sides, the translucent opal with flashes of fiery colour suspended in body – reds, golds, purples, greens, electric blues, oranges and yellows all present 2¾in. (7cm.) long

£15,000-25,000

\$23,000-38,000 €22,000-35,000



*72 BENITOITE AND NEPTUNITE SAN BENITO, CALIFORNIA

of natural form form the Dallas Gem Mine, New Idria District, blue benitoite crystals and dark, reddish brown prisms of neptunite crystals on a white natrolite matrix

8½in. (21.5cm.) wide

£4,000-6,000

\$6,100-9,000 €5,700-8,400

From a now defunct locality, this large, well-balanced specimen of benitoite (state gemstone of California) and neptunite has excellent contrasts and colours.



*73 A SPECIMEN OF MALACHITE

from the Mashamba West Mine, Katanga, the botryoidal crystals with natural surface lustre and texture, formed by fluids running through the deposit in the mine over millennia, which slowly and naturally polished the malachite; on custom, engraved lucite base 8in. (70cm.) high

£,5,000-8,000

\$7,600-12,000 €7,100-11,000



•*74
CALCITE ON DOLOMITE
HUANGSHI, CHINA

golden brown scalenohedron crystals of calcite, with natural etchings, atop a matrix Dolomite, from the Tongloushan Excavation Site, Daye County 6in. (15cm.) wide

£,800-1,200

\$1,300-1,800 €1,200-1,700



*75 AESTHETIC SPECIMEN OF CRYSTALLINE GOLD TUOLUMNE COUNTY, CALIFORNIA

the large specimen of gold crystals naturally formed across the quartz matrix, from the "Mother Lode" 4½in. (11cm.) high

£15,000-25,000

\$23,000-38,000 €22,000-35,000



*76 FINE CRYSTALLINE GOLD NEVADA, USA

the crystals of multiple natural forms, including octahedral, hexahedral and some displaying spinel-law twinning, from Round Mountain Mine, Round Mountain District, Nye Co.

2in. (5cm.) long

£,6,000-9,000

\$9,100-14,000 €8,500-13,000

*77 FERBERITE AND FLUORITE PORTLIGAL

of natural form ,the fluorite crystals see flowing down from the crown of this piece alongside the edges framing the ferberite, from Panasqueira Mine, Couto Mineiro da Panasqueira, Panasqueira, Covilhã, Castelo Branco District

5in. (13cm.) wide

£,2,500-3,500

\$3,800-5,300 €3,600-4,900



*78 A STEGOSAURUS PLATE

WYOMING, USA

a 20½ inch plate of *Stegosaurus stenops* from the Morrison Formation, Bone Cabin Quarry, Albany county Wyoming, Jurassic (156–147 million years ago)

20½in. (52 cm.) high

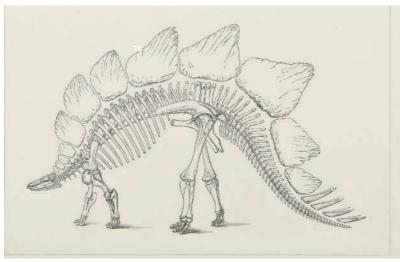
€3,000-5,000

\$4,600-7,500 €4,300-7,000

First discovered in the late nineteenth century by Othniel Charles Marsh, Stegosaurs are perhaps the most distinctive in appearance of all the dinosaurs with large plates along their backs and a fearsome tail spikes. The plates were originally thought to have been defensive armament for these enormous herbivores, but recently it has been suggested that they may have been for thermal regulations or sexual display.

The Bone Cabin Quarry is so-called because in 1897 W.G. Granger, a researcher for the American Museum of Natural History, came across a hut with its foundations made up from the local stone – pieces of dinosaur bone. Excavations in later years turned up some of the earliest and most important Jurassic specimens, such as the Carnegie *Diplodocus*, from which was made the famous cast "Dippy" who can be seen in the entrance hall of the Natural History Museum in London.





(Marsh's original illustration of Stegosaurus, not included in the lot)



*79 A TRILOBITE MOROCCO

a 2-inch *Leonaspis sp.* from the middle Devonian (393-383 million years ago) on original matrix with a brachiopod, prepared by Jeff Hammer 4in. (10cm.) wide

€1,200-1,800

\$1,900-2,700 €1,700-2,500

*80 TRILOBITE MOROCCO

the *Metacanthina issoumourensis* from the Pragian, Devonian (circa 411-408 million years ago) displaying well preserved schizochroal eye, prepared by Jeff Hammer

4in. (10cm.) wide

£1,200-1,800

\$1,900-2,700 €1,700-2,500



80



*81 A TURRET-EYED TRILOBITE RIVER VOLKHOV, RUSSIA

a *Chasmops nasutus* from the Ordovician (485-444 million years ago) 4½in. (11cm.) wide

£1,000−1,500

A BURROWING TRILOBITE MOROCCO

Paralejurus dormitzeri from the middle Devonian (393-383 million years ago), prepared by Jeff Hammer 4in. (10cm.) wide

£1,000-1,500

\$1,600-2,300 €1,500-2,100



\$1,600-2,300

22



83



*83 A TRILOBITE MOROCCO

Crotalocephalina gibba from the Pragian, Devonian (circa 411-408 million years ago) with a partial shell in the matrix, prepared by Jeff Hammer 3½in. (9cm.) wide

£1,000-1,500

\$1,600-2,300 €1,500-2,100

*84 A SPINY TRILOBITE

Kettneraspis sp. from the Devonian (419-359 million years ago), pepared by Jeff Hammer 4½in. (11cm.) wide

£1,000-1,500

\$1,600-2,300 €1,500-2,100



85 A FOSSIL PALM FLOWER AND FISH GREEN RIVER, WYOMING

the flower of a *Sablites sp.* in the same matrix as a *Priscara liops* from the Eocene (circa 50 million years ago) 25×19 in. $(64 \times 49$ cm.)

£5,000-8,000

\$7,600-12,000 €7,100-11,000



86 A SPECIMEN OF PETRIFIED WOOD NORTHERN ARIZONA, USA

Araucarioxylon arizonicum from the late Triassic (circa 225 million years ago), the slice cut and polished to reveal internal structure with strong colours

19 x 15 x 8in. (48 x 38 x 20 cm.)

€,2,000-3,000

\$3,100-4,500 €2,900-4,200

87 A FOSSIL WOOD BOWL MADAGASCAR

Araucaria sp. from the late Triassic (235-201 million years ago) of bowl form, cut and polished 17½in. (44cm.) wide

€2,000-3,000

\$3,100-4,500 €2,900-4,200



88

A 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

15½in. (39cm.) wide

£,1,000-1,500

\$1,600-2,300 €1,500-2,100

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.



88

89 BANDED IRON TIGER EYE

AUSTRALIA

from the early Proterozoic (circa 2.5 billion years ago) the panel of Marra Mamba iron formation cut and polished 14½in. (37cm.) wide

£,1,000-1,500

\$1,600-2,300 €1,500-2,100

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.



89



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

from the early Proterozoic (circa 2.5 billion years ago) the panel of Marra Mamba iron formation cut and polished to form a sphere 11½in. (29cm.) diameter

€,7,000-10,000

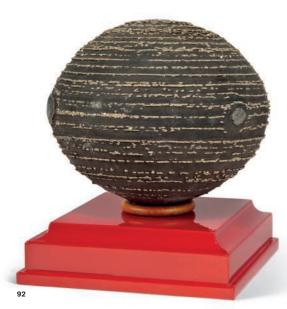
\$11,000-15,000 €9,900-14,000 Found only in the blue crocidolite seams of the Hamersley Range in the Pilbara region of Western Australia, this highly iridescent ironstone, Marra Mamba, is amongst the rarest and most colourful of all Tiger-eye. Probably stromatolitic in origin, this fossil is amongst the earliest signs of life on Earth, and as a semi-precious stone is also one of the most beautiful.

91 AN AMETHYST GEODE ARTIGAS, URUGUAY

of concave form, one side cut and polished to reveal the dark purple crystals of amethyst

£1,300−1,800

\$2,000-2,700 €1,900-2,500





the polished slice supported on stand 24in. (61cm.)

£1,200-1,800

\$1,900-2,700 €1,700-2,500



92 A PYRITE NODULE CHINA

the concretions of pyrite bands on shale 7in. (19cm.) wide

£1,000-1,500

\$1,600-2,300 €1,500-2,100





*94 A PRIMITIVE FOSSIL PARROT GREEN RIVER, WYOMING

Cyrilavis sp. from the Eocene (circa 50 million years ago) with skull in facsimile and complete body 8½ x 7½in. (21.5 x 19.5cm.)

€,4,000-6,000

\$6,100-9,000 €5,700-8,400

It is only in the last 30 years that the evolutionary history of parrots has been well studied, they had previously been thought to have the least complete fossil record amongst the birds. The present specimen is from an early stem group of parrots, before the development of their feeding specializations and distinctive curved beaks.





*95 A FOSSIL JUVENILE TURTLE GREEN RIVER, WYOMING

the Chisternon undatum from the Eocene (circa 50 million years ago)

6 x 6in. (15.5 x 15.5cm.)

€,5,000-8,000

\$7,600-12,000 €7,100-11,000

A very rare juvenile example of an extinct species snapping turtle.



TWO LARGE FRENCH AMMONITES
LORRAINE, FRANCE

Coroniceras sp. from the Toarcian, Jurassic
(183–174 million years ago)
32½ in. (83 cm.) high

£4,500-6,000

\$6,800-9,000 €6,400-8,400

97 A CLAW OF A LARGE SAUROPOD DINOSAUR UTAH, USA

from a *Camarasaurus sp.* of the late Jurassic (circa 155-145 million years ago) 12in. (31cm.) high on stand

£5,000-8,000

\$7,600-12,000 €7,100-11,000

Growing up to 75 foot in length, Camarasaurus was truly one of the giants of the Jurassic





*98 A TYRANNOSAURID TOOTH MONTANA, USA

Daspletosaurus torosus from Judith River Formation, Campanian, late Cretaceous, Toole County, (77-74 million years ago)

4in. (10cm.) high on stand

£,1,000-1,500

\$1,600-2,300 €1,500-2,100

Slightly smaller than their well-known cousins *Tyrannosaurus rex* but living eight million years before them, *Daspletosaurus* was a ferocious dinosaur at the top of the food chain.

*99 THE TOOTH OF A TYRANNOSAURUS-REX MONTANA, USA

from the Hell Creek Formation, Maastrichtian, late Cretaceous (72-66 million years ago) the 5-inch tooth of a *Tyrannosaurus rex*, on stand 6in. (15cm.) high on stand

£,1,500-2,500

\$2,300-3,800 €2,200-3,500



100

*100 A LARGE ALLOSAURUS CLAW MOFFAT COUNTY, COLORADO

Allosaurus Fragilis, from the Morrison Formation, Skull Creek Quarry, late Jurassic (156-147 million years ago) 7 in. (18 cm.) long

£,6,000-9,000

\$9,100-14,000 €8,500-13,000

THE TOOTH OF A TYRANNOSAURUS-REX SOUTH DAKOTA, USA

the fully rooted tooth of Tyrannosaurus rex, from the Hell Creek Formation, Maastrichtian, late Cretaceous (72-66 million years ago)

81/4in. (21 cm.) long

£,7,000-10,000

\$11,000-15,000 €9,900-14,000

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.



101



*103 A FINE ROOTED ALLOSAURUS TOOTH WYOMING, USA

102

Allosaurus sp. from the Morrison Formation, Dana Quarry, Ten Sleep, Washakie County, Kimmeridgian, late Jurassic (circa 155 million years ago) 2in. (5cm.)

£2,000-3,000

\$3,100-4,500 €2,900-4,200

*102 THE VERTEBRA OF A TRICERATOPS HELL CREEK FORMATION MONTANA

from the Hell Creek Formation, Maastrichtian, late Cretaceous (68-65 million years ago), a vertebra of a Triceratops sp., on custom stand 18in. (46cm.) high

£,1,000-1,500

\$1,600-2,300 €1,500-2,100

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.



■*104 A MOSOSAUR SKELETON

MOROCCO

Halisaurus arambourgi from Khouribga phosphate deposits, Maastrichtian, late Cretaceous (72-66 million years ago)

8ft. (2.4m) long

£25,000-35,000

\$38,000-53,000 €36,000-49,000





105 ROSE QUARTZ ON PYRITE

of natural form, on fitted stand 10½in. (27cm.)

€,800-1,200

\$1,300-1,800 €1,200-1,700

*106 A SPECIMEN OF PETRIFIED WOOD ARIZONA, USA

Araucarioxylon arizonicum polished to egg form, from the Chinle formation, Triassic (circa 225 million years ago) 12.5in. (32cm.) high

£1,000-1,500

\$1,600-2,300 €1,500-2,100



107

107 TWO AMETHYST GEODES BRAZIL of concave form, both cut and polished 11in. (28.5cm.) high

€1,200-1,500

\$1,900-2,300 €1,700-2,100





*108 A PTEROSAUR SOLNHOFEN, GERMANY

from the Jurassic (circa 150 million years ago) the complete skeleton of *Rhamphorhyncus muensteri* placed in ammonite-bearing matrix

41 x 30in. (105 x 79cm.)

£,90,000-120,000

\$140,000-180,000 €130,000-170,000

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.

109

AN ENGLISH WOOLLY MAMMOTH TOOTH

WANDSWORTH, LONDON

the molar of a *Mammuthus primigenius* from the Devensian (110,000-10,000 years ago), with an old collection label applied to the side

9½in. (24cm.)

£1,000−1,500

\$1,600-2,300 €1,500-2,100

PROVENANCE:

Found December 1886 Collection of Wintour F. Gwinnell FGS, 1917







cut and polished, from the Eocene (50-34 million years ago) 23in. (59cm.) diameter

£1,800-2,500

\$2,800-3,800 €2,600-3,500







*111 A DINOSAUR VERTEBRA SOUTH DAKOTA, USA

a small vertebra from the tail of *Edmontosaurus annectens* from the Ruth Mason Quarry, Hell Creek Formation, Ziebach County late Cretaceous (66 million years ago)

9in. (23cm.)

£1,000-1,500

\$1,600-2,300 €1,500-2,100



■*112 A LARGE MOSOSAUR SKULL MOROCCO

Prognathodon curii from the Khouribga phosphate deposits, Maastrichtian, late Cretaceous (72–66 million years ago) 39in. (100cm.) long

£,30,000-50,000

\$46,000-75,000 €43,000-70,000



■ 113 A FOSSIL TREE BRANCH MADAGASCAR

Araucaria sp. polished 35in. (89cm.) long

£,800-1,200

\$1,300-1,800 €1,200-1,700

114 A SEA-BED PLAQUE KHOURIBGA, MOROCCO

natural assemlage with remains of a *Mosasaur* jaw, *Carcharodon*, and other species, in their limestone matrix 25½in. (65cm.) wide

£,700-1,000

\$1,100-1,500 €980-1,400



114



■ 115 A FOSSIL PANEL TABLE TOP MOROCCO

the polished marble top from the Devonian (414-345 million years ago) with specimens of *Orthoceras sp.*, on a glass and chrome low table $47 \times 27\frac{1}{2} \times 16$ in. ($120 \times 70 \times 41$ cm.)

£,1,000-1,500

\$1,600-2,300 €1,500-2,100



116 AN AMMONITE MADAGASCAR

Lytoceras sp. from the Jurassic (201-145 million years ago) 11½in. (28cm.) diameter

£1,000−1,500

\$1,600-2,300 €1,500-2,100

117
A FOSSIL FERN
OSNABRUECK, GERMANY
the Neuropteris sp. in its original shale matrix
13 in. (33 cm.) high $\pounds 2,800-3,500$ \$4,300-5,300 •4,000-4,900



117



118 TWO AMMONITES

MADAGASCAR

one of the *Clioniceras sp.* polished to reveal suture lines, on stands

8¾in. (22cm.) wide

€,800-1,200

\$1,300-1,800 €1,200-1,700

119 A WOOLLY MAMMOTH TOOTH

TAYMYR, RUSSIA

From the Devensian (110,000 to 10,000 years ago), the tooth of a *Mammuthus primigenius*

12in. (31cm.) long £1,000-1,500

\$1,600-2,300 €1,500-2,100





120 TWO TRILOBITES MOROCCO

a *Drotops armatus* and *Drotops megalomanicus* from the middle Devonian (393–388 million years ago), on stands 8in. (21cm.) wide on stand

 $\pounds_{1,000-1,500}$ \$1,600-2,300 \in 1,500-2,100

121 A MEGALODON TOOTH NORTH CAROLINA, USA

From the Tortonian (12-7 million years ago) a 6-inch tooth of a *Carcharodon sp.*, on stand 6½in. (17cm.) high

€,2,000-3,000

\$3,100-4,500 €2,900-4,200



121



122 AN AMMONITE

RUSSIA

Speetoniceras sp. from Oxfordian, late Cretaceous (164-157 million years ago), supported on stand 15in. (38cm.) wide

£1,500-2,500

\$2,300-3,800 €2,200-3,500

123 A LARGE SPLIT AMMONITE MADAGASCAR

Cleoniceras sp. from the early Cretaceous (circa 135 million years ago), split and polished to reveal inner chambers of caramel-brown calcite 13½ in. (34cm.) diameter

£2,000-3,000

\$3,100-4,500 €2,900-4,200





123





*124 AN IRIDESCENT AMMONITE CANADA

the 17-inch specimen of *Placenticeras costatum* from the upper Cretaceous, Bearpaw formation (75-72 million years ago), showing strong iridescence of red, orange and green yellows to both sides.

17in. (45cm.) wide

£,20,000-30,000

\$31,000-45,000 €29,000-42,000

The opal like iridescence of these ammonites from Alberta, Canada has been termed ammolite and since 1981 has had the status of a gemstone. The shimmering, metallic colours were caused by the combination of millions of years of compression and the mineralization of iron, copper and silica which precipitated from volcanic ash. The opalescent layers of colour are particularly prized in the Chinese philosophical system of Feng-Shui.

The ammonites are a group of 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). The sequence of events that famously killed off the dinosaurs also drove the ammonites to extinction





•*125 A STALACTITE OF MALACHITE

of natural form, from Congo Mine, Lubumbashi, Katanga Copper Crescent, Katanga Province 6in. (15cm.) high

€,1,200-1,800

\$1,900-2,700 €1,700-2,500

*126 A LARGE PLATE OF ENGLISH FLUORITE COUNTY DURHAM

of natural form, the green crystals showing fluorescence to deep purple in sunlight from the Rogerley Mine, Weardale

16in. (41cm.) wide

€,5,000-8,000

\$7,600-12,000 €7,100-11,000





•*127 A LARGE SPECIMEN OF STILBITE

from Puna, Maharashtra, the cream-coloured stilbite in natural "bowtie" crystal form with excellent luster and habit, on matrix

5½in. (14cm.) wide

£,600-900

\$910-1,400 €840-1,300

*128 YELLOW FLUORITE

from Villabona Mine, Asturias, the tower of yellow crystals with an intense hue and luster 61/4in. (16cm.) high

£2,500-3,500

\$3,800-5,300 €3,600-4,900



*130 MALACHITE PSEUDOMORPH AFTER AZURITE NAMIBIA

from the Tsumeb Mine, Tsumeb, Otjikoto, swirling chatoyant patterns of the malachite with velvet-like appearance while preserving the sharp crystal faces of the Azurite; the reverse side showing the lustre of deep blue azurite and areas that are pseudomorphed 4in. (10.5cm.) high

£,1,200-1,800

\$1,900-2,700 €1,700-2,500

This is a classic example of a Pseudomorph of Azurite into Malachite from one of the most productive copper mines in history.



*129 A SPECIMEN OF FLUORITE TENNESSEE. USA

from Elmwood Mine, Carthage, Central Tennessee Ba-F-Pb-Zn District, Smith Co., the attractive cluster of sharp cubic fluorites, with purple colour and lustre 8in. (20cm.) wide

£,2,000-3,000

\$3,100-4,500 €2,900-4,200

The old Elmwood Zinc mine is one of the most famous in the world for classic old American material, of fluorite and sphalerite, calcite, and barite. This specimen was collected in the 1980s and remains in fine condition.



*131 GALENA AND QUARTZ BUI GARIA

from Madan ore field. Rhodope Mts, Smolyan Oblast, the galena of classic spinel-law twinning form, with dozens of terminated quartz crystals, all of natural form 6in. (15cm.) wide

£,600-900

\$910-1,400 €840-1,300

*132 PINK SMITHSONITE MEXICO

from Choix, Sinaloa Province, of natural form 3¾in. (9.5cm.) wide

€1,500-2,500

\$2,300-3,800 €2,200-3,500

These old smithsonites from a small artisanal (hand tool worked) mine in Choix, once worked for lead, have produced some of the world's most beautiful specimens of smithsonite, a lead carbonate mineral species. Collectors today still treasure these old classics, though they only turn up on the market out of old collections. The present specimen has a particularly nice display face with rolling hillocks of natural pastel colour, and no damage at all. It would date before 2000, when the last finds came out. Smithsonite of this particular colour and shape combination is unique to this location.



•*133 CUBES OF PYRITE

the cubic crystals of natural form, in their rhyolite matrix 14in. (36cm.) wide

£,1,500-2,500

\$2,300-3,800 €2,200-3,500





•*134
NATIVE WIRE SILVER IN CALCITE
MOROCCO

the crystallized wire silver cover a white calcite face on black acanthite matrix, from the Imiter Mine, Boumalne-Dadès, Ouarzazate Province, Souss-Massa-Draâ Region 5½in. (14cm.) high

£800-1,200

\$1,300-1,800 €1,200-1,700





*135 SPECIMEN OF PYRITE ON QUARTZ WASHINGTON, USA

from Spruce Claim, Goldmyer Hot Springs, King Co., the cluster of terminated quartz crystals lustrous pyrite cubes

7in. (17cm.) wide

€,4,000-6,000

\$6,100-9,000 €5,700-8,400

136 SIKHOTE-ALIN METEORITE

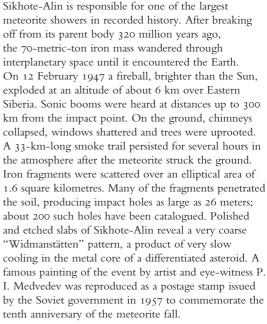
FELL TO EARTH IN SIBERIA, RUSSIA IN 1947

This specimen (a coarse octahedrite, IIAB) is a complete individual showing delicately structured, centimetresize, regmaglypts (thumb print like appearances) produced during the meteorite's fiery plunge through the atmosphere.

7in. (18cm.) high

£,5,000-8,000

\$7,600-12,000 €7,100-11,000







137

137 A CAMPO DE CIELO METEORITE GRAN CHACO GUALAMBA. ARGENTINA

a complete iron meteorite, coarse octahedrite – IAB-MG 4½in. (12cm.) long

£,1,000-1,500

\$1,600-2,300 €1,500-2,100

138 CAMPO DEL CIELO METEORITE

GRAN CHACO GUALAMBE, ARGENTINA

a complete iron meteorite, coarse octahedrite – IAB-MG 7½in. (19cm.) long

£1,500-2,500

\$2,300-3,800 €2,200-3,500



A CAMPO DEL CIELO METEORITE GRAN CHACO GUALAMBE, ARGENTINA

a complete iron meteorite, coarse octahedrite – IAB-MG; the surface with deep natural grooves and crenellations that are accented by a dusky platinum-hued patina

7in. (18cm.) wide

£,2,500-3,500

\$3,800-5,300 €3,600-4,900

This great meteorite was first discovered by Spanish explorers in Chaco, Argentina in 1572. Thousands of pieces have been found near the point of impact, the largest weighing an immense 37 tons. It has been determined from carbon dating, taken from charred wood remains from the crater, that the fall occurred between 4,000 and 6,000 years ago. The cosmic radiation of the Meteorite mass was found to be relatively young at approximately 14 Million years old.





*140 END PIECE OF A LUNAR BRECCIA (NWA 8277) DISCOVERED IN MOROCCO, 2013

the cut face of this dark-coloured specimen contains impact melt, the matrix of with white feldspar and green-brown pyroxene and olivine grains; the reverse side with a sandblasted patina

3in. (8cm.) wide

£,30,000-50,000

\$46,000-75,000 €43,000-70,000 There are currently less than 250 lunar meteorites known, but because many specimens break up in the atmosphere or on the ground, there are probably only about 120 separate lunar meteorites. None is an observed fall. Lunar meteorites are readily recognizable because they can be compared to the samples returned by the Apollo astronauts and three Soviet Luna missions. Many of the lunar meteorites were shocked when launched from the Moon's surface. NWA 8277 is a breccia composed of numerous inclusions containing various-size crystals of plagioclase (a calciumaluminum silicate), pyroxene and olivine (magnesiumand iron-rich silicate minerals). The specimen was found in the Sahara as a single 773-g stone without any fusion crust.



*141 TIRHERT METEORITE — A METEORITE WHICH NEVER HIT EARTH

HED - UNBRECCIATED EUCRITE
GUELMIM-ES-SEMARA, MOROCCO (28°93' N, 8°90' W)

Blanketed in what is possibly the glossiest fusion crust of *any* meteorite — a characteristic that the accompanying image cannot truly capture — is the richly evident rippling of formerly molten material.

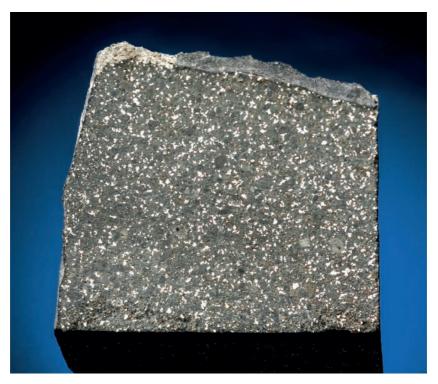
61 x 44 x 49mm (2½ x 1¾ x 2 in.) 148g

£,12,000-18,000

\$19,000-27,000 €17,000-25,000

On July 9, 2014 at 9:30pm Southern Morocco experienced an intense fireball travelling south-easterly followed by multiple sonic booms heard as far as 220 km from the impact site. Municipal and governmental authorities immediately mounted a search, and the next day meteorites were recovered close to the stretch of Highway 12 that runs between Foum El Hisn and Assa

near the Algerian border. The news of meteorites being found travelled quickly and in short order hundreds of people arrived at the 3 x 6 kilometre site. Tirhert meteorites have what is perhaps the glossiest and most lustrous fusion crust of any meteorite. Gleaming even in soft light, Tirhert specimens possess an almost inconceivable glaze. Transparent patches of fusion crust reveal plagioclase grains beneath the surface; samples that broke on impact further reveal honey-brown pyroxene grains. While the Tirhert meteorite shower occurred in an area nearly bereft of vegetation, a young boy found the specimen now offered wedged between the branches of a small tree — and he enjoyed quite a bit of local celebrity as a result. There are only about 20 unbrecciated eucrites known; about a dozen were found in Antarctica and are forever unavailable to the public. Tirhert is the only witnessed fall of an unbrecciated eucrite.



*142 SYLACAUGA METEORITE

TALLADEGA COUNTY, ALABAMA (33°14' N, 86°17' W)

This fresh partial slice has two edges of fusion crust delimiting its grey matrix with a rich profusion of iron-nickel flakes suspended throughout. Modern cutting. 39 x 32 x 2 mm (½ x ½ x ½ s in.)

10.3g

£5,000-8,000

\$7,600-12,000 €7,100-11,000

PROVENANCE:

Smithsonian Institution, Washington, D.C. Dr. James Schwade Meteorite Collection, Kankakee, IL

The only documented instance of a meteorite injuring a person occurred on November 30, 1954 at 2:46 pm in Sylacauga, Alabama. The fireball from which the meteorite originated was seen in broad daylight across three states and its descent was accompanied by sonic booms. Some eyewitnesses thought a plane had crashed; others felt this extraordinary event was the nefarious

doings of the Soviets — the result of rampant Cold War paranoia. Two meteorites were recovered. One crashed through the roof of Ann and Eugene Hodge's home, where it bounced off a radio and struck Ann Hodges while she napped. While Hodges and her landlord fought over the meteorite's ownership, the U.S. Air Force took custody. While the law favored the landlord, public sentiment was solidly behind Hodges, who exclaimed, "God intended it to hit me. After all, it hit me!" The second meteorite was found by a local farmer, Julius McKinney, who quickly sold his specimen to the Smithsonian. The proceeds from this sale enabled McKinney to purchase a new car and home. The Hodges finally owned the meteorite that punctured their roof (and almost Ann herself) after a year of legal wrangling and a payout to their landlord. However, interest had waned during the course of the year and when the Hodges couldn't find a buyer, they donated the rock to the Alabama Museum of Natural History. Never having recovered from the emotional distress associated with these events, Ann Hodges suffered a nervous breakdown and died at the age of 52.



143

LARGE SIKHOTE-ALIN METEORITE

IRON, COARSE OCTAHEDRITE - IIAB

MARITIME TERRITORY, SIBERIA, RUSSIA (46°9' N, 134°39' E)

Blanketed in a dark gun-metal patina and engagingly sculptural, this impressive meteorite is supported on a fitted stand.

33 x 23 x 22cm. (13 x 9 x 9in.)

45kg (99lbs)

£,20,000-30,000

\$31,000-45,000 €29,000-42,000

The Sikhote-Alin event was the largest meteorite shower in recorded history. After breaking off from its parent asteroid 320 million years ago, a 70-metric-ton iron mass wandered through interplanetary space until encountering Earth on 12 February 1947. A fireball

brighter than the Sun (it created moving shadows in broad daylight) was seen to explode at an altitude of about 6 km over eastern Siberia. Sonic booms were heard at distances up to 300 km from the point of impact. Chimneys collapsed, windows shattered and trees were uprooted. A 33-km-long smoke trail persisted for several hours in the atmosphere after impact. Iron fragments were scattered over a broad elliptical area. Many of the fragments penetrated the soil, producing impact craters as large as 26 meters; about 200 such depressions have 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 the meteorite fall.



*144 AN ALLOSAURUS LEG BONE WYOMING, USA

the tibia of an Allosaurus fragilis, from the Morrison Formation, Bone Cabin Quarry, Albany county, Jurassic (156-147 million years ago), with support stand for vertical display 29in. (74cm.) long

£,2,000-3,000

\$3,100-4,500 €2,900-4,200

A JURASSIC DINOSAUR VERTEBRA WYOMING, USA

a tail vertebra of Diplodocus carnegii from the Dana Quarry, Ten Sleep, Washakie County, Kimmeridgian, late Jurassic(circa 155 million years ago)

10 x 16 x 8½in. (25 x 41 x 22cm.)

£1,000−1,500 \$1,600-2,300

€1,500-2,100





146

146 A FOSSIL SAWFISH

from the late Cretaceous, (101-66 million years ago), the 50 inch Sclerorhyncus sp. in matrix, fitted for wall

mounting 56 x 19in. (142 x 48cm.)

£,2,000-3,000

\$3,100-4,500 €2,900-4,200

A FOSSIL SHRIMP SOLNHOFEN, GERMANY

from the Jurassic (circa 150 million years ago) the 10inch specimen of Aeger tipularius, very well preserved, in original matrix

29½ x 21in. (75 x 53cm.)

€,1,500-2,500

\$2,300-3,800 €2,200-3,500





148 A FOSSIL LOBSTER SOLNHOFEN, GERMANY

a 7-inch Cycleryon propinquus from the Jurassic (150 million years ago) 12 x 10½in. (30 x 27cm.)

£1,500-2,500

\$2,300-3,800 €2,200-3,500

149 A FOSSIL SHRIMP

SOLNHOFEN GERMANY

Aeger sp. from the Jurassic (circa 150 million years ago) 8 x 12in. (20 x 30cm.)

£1,200-1,800

\$1,900-2,700 €1,700-2,500





150
A LARGE TRICERATOPS HORN
HELL CREEK FORMATION, MONTANA

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

21in. (53cm.) long

£2,500-3,500

\$3,800-5,300 €3,600-4,900

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, *Tyrannoraurs rex*.

151 A LARGE FOSSIL FISH GERMANY

Dapedium sp. from the Lower Jurassic, Toarcian (182-174 million years ago) Posidonienschiefer formation, Holzmaden Germany 10 x 19in. (26 x 49cm.)

£,2,500-3,500

\$3,800-5,300 €3,600-4,900



151



■ 152 A DINOSAUR FOOTPRINT

probably from a Hadrosaur from the late Cretaceous (100-66 million years ago) 28in. (71cm.) high

£,2,000-3,000

\$3,100-4,500 €2,900-4,200

Trace fossils represent the activity of past life, and along with body fossils are important evidence of past behaviour. The size of and spacing between footprints can provide information on fast a dinosaur was able to run.

153 AN AMMONITE GROUP MADAGASCAR

various species including *Cleoniceras sp.* and *Cenoceras sp.* three of the specimens polished, and all in their original matrix

19in. (49cm.) high

£,1,500-2,500

\$2,300-3,800 €2,200-3,500





154 A DINOSAUR EGG FRANCE

from the Cretaceous (145-66 million years ago) 10in. (26cm.) wide

€,1,500-2,500

\$2,300-3,800 €2,200-3,500

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

the 23-inch Phareodus encaustus with a Priscacara serrata, from the Eocene (circa 50 million years ago) 44 x 35½in. (112 x 90cm.)

£2,500-3,500

\$3,800-5,300 €3,600-4,900





■*156 A PLAQUE OF ELEVEN FISH GREEN RIVER, WYOMING

from the Eocene (circa 50 million years ago), the large panel with various species, including an 18-inch $Diplomystus\ dentatus$ 56 x 42in. (142 x 107cm.) in frame

£,3,000-5,000

\$4,600-7,500 €4,300-7,000



157 A JUVENILE ICHTHYOSAUR **GERMANY**

from the lower Jurassic (200-176 million years ago) Posidonienschiefer formation, the Stenopterygius quadriscissus showing some three-dimensionality of preservation

14 x 49in. (36 x 125cm.)

£,35,000-50,000

\$53,000-75,000 €50,000-70,000

The first complete Ichthyosaur 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.



158 A JURASSIC AQUATIC LIZARD SOLNHOFEN, GERMANY

from the Tithonian age, Jurassic (circa 150 million years ago) the 5-foot long *Pleurosaurs goldfussi* with central torso left in original position, the neck and tail curled, in limestone slab supported on black backboard 45×23 in. (114 × 60cm.)

£30,000-50,000 \$46,000-75,000 €43,000-70,000

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



A VERY LARGE FOSSIL CROCODILE **GERMANY**

Steneosaurus bollensis from the Lower Jurassic, Toarcian (182-174 million years ago) Posidonienschiefer Formation Holzmaden, the complete specimen with three-dimmensional preservation, placed in heavy shale plaque for wall mounting

55½ x 119in. (141 x 302cm.)

€,50,000-80,000

\$76,000-120,000 €71,000-110,000



Despite being not-too-distant relatives of the dinosaurs, the crocodilians 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.

160

A TRIPLE FOSSIL SEALILY PLAQUE

GERMANY

from the Lower Jurassic, Toarcian (174-182 million years ago) Posidonienschiefer Formation, Holzmaden Germany, the three curved specimens of Seirocrinus subangularis anchored to a shell encrusted flotsam 50 x 39in. (196 x 97cm.)

£,20,000-30,000

\$31,000-45,000 €29,000-42,000

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.





*161 FOSSIL STINGRAY WITH SMALL **FISH**

GREEN RIVER, WYOMING

from the Eocene (circa 50 million years ago), a female Heliobatis radians showing fine preservation, with multiple small fish in a limestone matrix.

30 x 40in. (76 x 102cm.)

£2,500-3,500

\$3,800-5,300 €3,600-4,900

162 A LARGE UNCOILED HETEROMORPH AMMONITE VOLGA RIVER, RUSSIA

the iridescent Tropaeum sp. from the early Cretaceous (145-100 million years ago)

29in. (74cm.) high

£4,000-6,000

\$6,100-9,000 €5,700-8,400



162



*163 A LARGE PREDATORY FISH SKULL KANSAS, USA

the skull and front skeletal remains of, *Xiphactinus audax*, from the Niobrara Formation, Logan Co., Western Kansas, late Cretaceous (87-82 million years ago)

27 x 31in. (69 x 78.5cm.)

€,2,000-3,000

\$3,100-4,500 €2,900-4,200



164 A VERY LARGE CARVED AMMONITE MOROCCO

from the Cretaceous (145-66 million years ago) a Mantelliceras sp. the front heavily carved, the reverse left in natural state.

22in. (56cm.) wide

£,2,500-3,500

\$3,800-5,300 €3,600-4,900

165 **AN AMMONITE**

164

Speetoniceras sp. from the Oxfordian, late Cretaceous (164-157 million years ago), supported on iron stand 23in. (59cm.) high

£1,500-2,500

\$2,300-3,800 €2,200-3,500





166 A SPECIMEN OF LABRADORITE MADAGASCAR

the free-form polished on all sides, on custom base 12in. (30cm.) high

£1,000−1,500

\$1,600-2,300 €1,500-2,100

166



167



168 A SPLIT AMMONITE VOLGA RIVER, RUSSIA

Spectoniceras sp. from the Jurassic (200-145 million years ago) split and polished to reveal internal chambers, supported on custom stands 18in. (46cm.) wide

£3,000-5,000

\$4,600-7,500 €4,300-7,000

169

A SPECIMEN OF AMETHYST

MINAS GERAIS, BRAZIL

of hollow concave form, the edges polished

25in. (63cm.) wide

£2,000-3,000

\$3,100-4,500 €2,900-4,200





■170
A SPLIT AMETHYST GEODE PAIR
RIO GRANDE DO SUL, BRAZIL
of tall hollow concave form, each cut and polished
57in. (146cm.) tall
£5,000-8,000

\$7,600-12,000 €7,100-11,000



171 A SLICE OF PETRIFIED PALM WOOD INDONESIA

From the Oligocene (34–23 million years ago) the polished slice of *Palmoxylon sp.* preserving texture of bark to edge 18in. (46cm.) wide

£,1,500-2,500

\$2,300-3,800 €2,200-3,500

*172 FOSSIL LEAVES MONTANA, USA

specimens of Beringiaphyllum cupanoides, Davidia antiqua, Viburnum asperum and Zizyphoides flabellum from the Fort Union Formation, Paleocene (circa 64 million years ago) in their original matrix 8½in. (21.5cm.) wide (2)

£1,000−1,500

\$1,600-2,300 €1,500-2,100



172





multiple specimens of *Davidia antiqua* and *Viburnum asperum* from the Fort Union Formation, Paleocene (circa 64 million years ago) in their original matrix

15in. (37.5cm.) wide

£,1,000-1,500

\$1,600-2,300 €1,500-2,100

These leaves come from the geological age that immediately followed the extinction event that famously killed off the dinosaurs.



EDMONTOSAURUS (LOT 174)









■*174

A DUCK-BILLED DINOSAUR

SOUTH DAKOTA, USA

Edmontosaurus annectens, a highly complete specimen assembled from finds in a large bonebed from the Ruth Mason Quarry, Hell Creek Formation, Maastrichtian, Late Cretaceous (66 million years ago) 27ft. (8.3m) long

£,200,000-300,000

\$310,000-450,000 €290,000-420,000

PROVENANCE:

Discovered at the Ruth Mason Quarry by the Black Hills Institute of Geological Research.

Seibu Museum of Art, Tokyo 1991-2005.

Whence acquired by a Private Collection, USA.

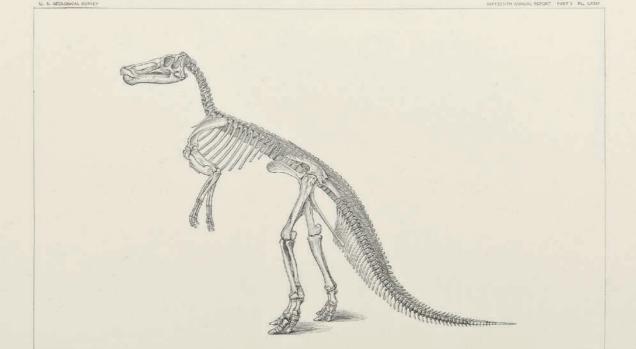
Bonham's, Reno, 3 October 2009, lot 25.

Private Collection, USA.

Acquired from the above by the present owners; the skeleton remounted to current pose.

EXHIBITED:

Museum of Ancient Life, Lehi, Utah, March 2015



(Marsh's original illustration, showing a bipedal stance, not included in the lot)

The most famous of the duck-billed dinosaurs, *Edmontosaurus* had short forelimbs, a long, pointed tail, feet fitted with three toes. The head was flat and ended with a beak. A herbivore, it chewed food with nearly a thousand small teeth in its cheeks. Its size could reach 13 metres and weigh 3.5 tons.

RESTORATION OF CLAOSAURUS ANNECTENS Minin.

The early specimens discovered in the 1890s were named *Claosaurus* by Othniel Charles Marsh, who illustrated them as being fully bipedal. Later research has suggested it could also walk on all four legs to graze low lying vegetation. The stomach contents of the top carnivores of the time, and bite marks found on tail bones strongly suggest that *Edmontosaurs* were firmly on the menu for late Cretaceous therapod dinosaurs.

Living alongside fellow giants *Triceratops* and *Tyrannosaurus rex*, it was one of the last dinosaurs to walk the earth before their mass extinction 65 million years ago.

BOOKS (LOTS 175-180)



∆175

WILLIAM HOOKER (1779-1832)

Pomona Londinensis. London: James Moyes for the author: 1818. 4° (335 x 270mm). 40 (of 49) aquatints printed in colour and finished by hand. (Occasional light marginal dust-soiling.) Together with loose and defective accompanying text within original printed paper wrappers (wrappers lightly spotted, a few margins dust-soiled). Nissen BBI 913. Sold as a collection of plates, not subject to return.

£,2,000-3,000

\$3,100-4,500 €2,900-4,200

6176

JOHANN CHRISTOPH VOLCKAMER (1644-1720)

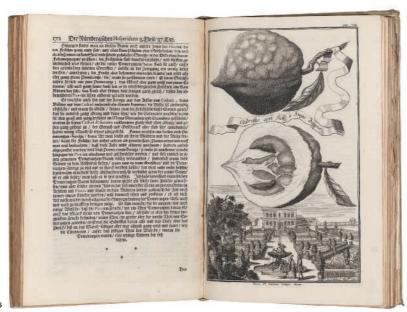
Nürnbergische Hesperides oder Gründliche Beschreibung der Edlen Citronat-, Citronen- und Pomeranzen-Früchte. Nuremberg: J.A. Endter, 1708.

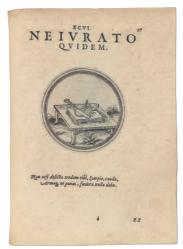
First edition of one of the most celebrated 18th-century fruit books.

2° (360 x 230mm). 116 engraved plates, including frontispiece. (Early small marginal repair in H4, and short repaired tear to two folding plates; some leaves loose, these with light wear in the margins.) Contemporary vellum. Provenance: Freiherr Ernst von Grunelius and Freifrau Anna von Grunelius née Gräfin von Bernstorff (bookplate dated 1929) - Central Art Library, Dresden (small stamps and shelf mark).

£,4,000-6,000

\$6,100-9,000 €5,700-8,400





6177

JOACHIM CAMERARIUS (1534-1598)

Symbolorum & emblematum. Nuremberg: Vögelin, 1605.

King Friedrich August II's copy of the first collected edition of the first work to treat natural history in emblematic form.

4 parts in one volume, 4° (195 x 147mm). Four engraved titles, 400 circular emblems in the text. Emblem 77 in part I with light hand-colouring; emblems 8 and 10 in part IV tipped in. (Lower margin of first title repaired, preliminary leaves of part I bound with part IV.) Contemporary vellum, spine titled in manuscript, sides ruled in blind (lacking front free endpaper, vellum soiled). *Provenance*: J.Fr.L. Reupsch of Helmstadt (1727–1788; monogram on title, signature on first leaf) – Dr J.M.W. Baumann (entomological engraved bookplate; some underlining, perhaps in his hand) – Friedrich August II, King of Saxony (1797–1854; bookplate) – Dresden Central Art Library (deaccessioned stamp).

€,900-1,200

\$1,400-1,800 €1,300-1,700

177





θ**178**

TOBIAS BEÜTEL (c.1627-1680)

Arboretum mathematicum. Dresden: Melchior Bergen, 1669.

First edition in a contemporary armorial binding.

4° (187 x 150mm). Engraved title, woodcut diagrams throughout. (Occasional small marginal dampstaining.) Contemporary calf, spine gilt in compartments, sides richly panelled in gilt with an all-over design of nested borders, centred with indistinct arms in gilt, edges gilt (front joint starting to split but holding). *Provenance*: Friedrich Augustus, Prince of Brunswick-Oels (1740-1805; bookplate with shelf marks) — Dresden Central Art Library (small stamp).

£,900-1,200

\$1,400-1,800 €1,300-1,700

For further information on these lots, please visit www.christies.com





θ179

CLAUDIUS PTOLEMAEUS (C.100-C.170)

Geografia cioè Descrittione universale della terra. Venice: G. Battista and G. Galignani, 1598-1597.

First edition in Italian of Magini's Ptolemy, with 64 finely engraved maps.

2 parts in one volume, 2° (285 x 198mm). Engraved double-hemisphere world map and 63 engraved half-page maps. (e1 with marginal flaw touching text, K4v with neat marginal repair touching text.) Contemporary calf, gilt spine, speckled edges (rebacked preserving original spine, new pastedowns, lower cover with patches repaired, corners repaired, joints starting to crack). *Provenance*: Johann, King of Saxony (1801–1873; crowned monogram stamp on titles) — Saxon State and University Library, Dresden (cancelled stamp on verso of first title).

 \pounds 2,000-3,000 \$3,100-4,500 \in 2,900-4,200



e180

HERBERT C. WHITE (FL. 1927).

Peking the Beautiful. Shanghai: The Commercial Press, Limited, 1927. First edition with introduction by Hu Shih, rare with original box. 4° (395 x 315 mm). Half-title. Frontispiece and 70 photographic plates mounted, numerous illustrations in text. (title with light marginal fingersoiling, some insignificant offsetting onto text leaves.) Original embroidered silk padded pictorial boards, edges uncut (extremities rubbed, lower joint splitting), contained in the original decorative box (worn, with crude tape repairs, one side missing).

£,1,000-1,500

\$1,600-2,300 €1,500-2,100

For further information on these lots, please visit www.christies.com

180





*181

AN AMERICAN 6-INCH CELESTIAL GLOBE

MERRIAM & MOORE 1852

comprised of twelve hand-coloured engraved gores, held in graduated brass meridian, supported on cart iron tripod stand with engraved calendrical sales on wooden horizon, the cartouche to southern hemisphere A New Six Inch CELESTIAL Globe Reduced from the latest authorities of the Astronomical ASSOCIATION LONDON BY MERRIAM & MOORE STATIONERS TROY NY 1852.

9in. (23cm.) high

£,800-1,200

\$1,300-1,800 €1,200-1,700

PROVENANCE:

from the collection of the astronomer Vera Rubin



PROPERTY OF AN IMPORTANT PRIVATE COLLECTOR

~182

A FRENCH ARMILLARY SPHERE

EARLY 19TH CENTURY

With paper leaf covered wood spheres and a bone model of the earth and moon on an ebonised plinth 15½in. (39cm.)

£,2,000-3,000

\$3,100-4,500 €2,900-4,200 VARIOUS PROPERTIES

183

AN ENGLISH 9-INC GLOBE

SMITH & SON, CIRCA 1860

the cartouche SMITH'S TERRESTRIAL GLOBE Containing all the MOST RECENT DISCOVERIES LONDON/ SMITH & SON, 63 CHARING CROSS comprised of twelve gores, with brass hour ring to pole, supported in graduated brass meridian ring on tripod stand with engraved paper horizon circle.

15in. (39cm.) high

€,800-1,200

\$1,300-1,800 €1,200-1,700





*184 A BOHEMIAN CLASSROOM GLOBE FELKL, LATE 19TH CENTURY

the 12-inch terrestrial globe, opening to reveal black painted interior with two suspension hooks, the cartouche ZEMEKOULE. Tiskem a nakladem vy d alo J. FELKL a SYN Jovarna na pomucky ucebne v Roztok ach u prahy

25in. (64cm.) high

€,1,500-2,500

\$2,300-3,800 €2,200-3,500



*185 AN AMERICAN TELLURIAN VETTER CO, CIRCA 1930

signed to the base THE VETTER CO BUFFALO N.Y. with 4-inch terrestrial globe and arm for Venus in original carrying case - with instruction manual Livre d'instrcution pour le planetarium ideal (The Vetter Co., Bridgeburg, Ontario; n.d.) 22½in. (57cm.) wide in case

£,1,000-1,500

\$1,600-2,300 €1,500-2,100

*186 AN AMERICAN PLANETARIUM LAING, LATE 19TH CENTURY

the wooden frame with complex pulley system for Venus, Moon and Earth which is a 3-inch terrestrial globe with chromolithographed gores, signed to plaque on arm LAING'S PLANTERARIUM PATENTED LAING PLANETARIUM CO. DETROIT, MICH U.S.A. 17in. (43cm.) wide

£,3,000-5,000

\$4,600-7,500 €4,300-7,000



*187 AN ORRERY

AMERICAN, CIRCA 1890

the geared mechanism and crank handle , the eight arms supporting: Mercury; Venus; painted Earth and Moon; Mars with two satellites; Jupiter with four satellites; Saturn with two rings and eight satellites; Uranus with four satellites and Neptune with six, supported on lacquered brass column with folding tripod feet

24½ in. (62cm.) high

£,7,000-10,000

\$11,000-15,000 €9,900-14,000





A TELLURIUM-LUNARIUM

PROBABLY BY ADOLF MANG, CIRCA 1895

the 6½ -inch globe with chromolithgraphed gores bearing horu scale 1-12-1-12 and degree scale 0-180°-0-180°, graduated meridian, with geared mechanism on case iron stand, in carrying case fitted for larger components 23½in. (60cm.) wide in case

£,2,000-3,000

\$3,100-4,500 €2,900-4,200



*189 A BOHEMIAN TELLURIAN LATE 19TH CENTURY

serial number 99, the 2-inch terrestrial globe with lithographed gores, oil lamp with green glass resevoir over calendrical dial, the geared mechanism on cast iron stand, signed to the arm *J. FELK PRAG* 23in. (59cm.) wide

£,1,500-2,500

\$2,300-3,800 €2,200-3,500

*190 A SWEDISH TELLURIAN SVANSTROM & RYLANDER, LATE

the 4-inch terrestrial globe by Schotte with lithographed gores, candle holder over calendrical dial, the geared mechanism on cast iron base signed *SVANSTROM & RYLANDER STOCKHOLM*.
23in. (59cm.) wide

€,1,500-2,500

19TH CENTURY

\$2,300-3,800 €2,200-3,500





191 A MECHANICAL ARMILLARY SPHERE VULLIAMY, EARLY 19TH CENTURY

the wooden base with crank handle signed VULLIAMY LONDON, the brass plate carrying a 3-inch armillary sphere with graduated equator, and colures, enrgaved tropics and ecliptic with zodiacal scale 6 x 8in. (15 x 20cm.)

€,3,000-5,000

\$4,600-7,500 €4,300-7,000

A rare didactic instrument, probably intended for didactic use.



*192 A WHIRLING TABLE GERMAN. LATE 19TH CENTURY

signed to plaque FERDINAND ERNECKE BERLIN TEMPELHOF, the crank handle wheel turning an apparatus to demonstrate centrifugal forces, with legs to vertical or horizontal display.

20½in. (52cm.) long

£600-900 \$910-1,400 €840-1,300

*193 A MAGNETIC GLOBE DEMONSTRATION APPARATUS

PHILIP HARRIS, EARLY 20TH CENTRY

the 6-inch parquetry globe with brass axis, cathode and anode, fitting in square wooden box with horiztonal plate for iron filings, maker's plaque to side *PHILIP HARRIS Ltd BIRMINGHAM*.

11in. (27.5cm.) wide

€,600-900

\$910-1,400 €840-1,300



SCIENTIFIC INSTRUMENTS (LOTS 194-223)



*195 AN HC-9 CIPHER MACHINE

AB TRANSVERTEX: SWEDEN, CIRCA 1950

serial number plaque *M 3858-301010 KRYAPP 301 TRAEX HC 9 24750*, the five rotor machine in green rubber carrying case.

 $7 \times 8 \times 3\frac{1}{2}$ in. (17 x 21 x 9cm.) in case

£1,500-2,500

\$2,300-3,800 €2,200-3,500

LITERATURE:

http:/www.cryptomuseum.com/crypto/transvertex/hc9/

Designed for relatively low level military use by the Swedish forces, the HC-9 was also well used in South American It embodied some new ideas in mechanical cryptography with alleged high resistance to cryptanalysis. The rear of the machine features a series of pins, combinations of which would be depressed by a punch key-card and the front window would have shown a randomised alphabet pairing on a rotating alphabet sheet of 16 lines. These the alphabet sheets and key cards were destroyed by the Swedish government when the HC-9s were declassified.



signed on the left of brass plate *Conto MODELL C. CARL LANDOLT Rechemmaschinen THALWIL b/ZÜRICH PATENT*, serial number 1596, eight input indicators each with two viewing windows, in original felt lined case





196 A RARE K-MODEL ENIGMA CIPHER MACHINE HEIMSOETH & RINKE, CIRCA 1936

Number K240, with complete electrical wiring, four aluminium rotors (one of which acts as a completely adjustable reflector) stamped I-III raisted 'QWERTZ' keyboard with crackle black painted metal case, in wooden carrying case with green night-time 13 x 11 x 6in. (33 x 28 x 15cm.)

£,60,000-90,000

\$91,000-140,000 €85,000-130,000

The three-rotor Enigma is the standard German electro-mechanical ciphering machine widely used in World War II. It derives from a 1918 patent by Dr. Arthur Scherbius and was bought out by the German military in 1929 and placed in service. Enigma in several variants was used by the German Navy, the Wehrmacht, the Luftwaffe, the state railroad system (who used a variant of the K Enigma with the notches swapped on rotors I and III, the Abwehr (intelligence) and the SS. Enigmas that were made in the 1930s and used by the military were used to hide the build-up of the German Army before WWII. This build-up was expressly forbidden by the Versailles treaty.

It was designed with a complex, interchangeable series of three rotors bearing the 26-character alphabet, a 'reflector' and a plugboard with movable connecting cords that connected pairs of letters. As an added precaution, the base or starting settings for the rotors was changed every 24 hours, according to pre-printed code books furnished in advance or supplied daily by courier. It has been calculated that the 3-rotor ENIGMA, with plugboard in use, made possible a total of 15 billion billion possible readings for each character.

Enigma was widely regarded by the Germans as too complex to be broken, but in the 1930s a team of Polish analysts (Marian Rejewski, Jerzy Rozycki and Henryk Zygalski) made remarkable progress in working out the machine's basic system, identified its vulnerabilities and succeeded in deciphering much of the encrypted German radio traffic. Their findings, including plans for very useful mechanical devices known as 'bombes', which aided in the decryption operation, were secretly passed on in 1939 to French and British investigators. An elite team of cryptanalysts, mathematicians and engineers including Alan Turing (1912-54) were established in a top-secret facility at Bletchley Park. For the rest of the war that legendary team's heroic and unstinting efforts gradually accomplished the seemingly insurmountable task of deciphering an enormous volume of encrypted communications. The critical intelligence deriving from their decipherment was dubbed ULTRA and was employed cautiously but to great effect during the war; some commentators credit ULTRA with shortening the war by some two years.

Very few Enigma machines survived the war and it is particularly unusual to find one that was made in the 1930s that remained in such good condition. During WWII many of the Enigma machines were destroyed in military actions; near the end of the war the Germans destroyed their remaining Enigma machines as they retreated rather than have them captured by the Allies. After the end of the war, Churchill ordered that all remaining Enigma machines were to be destroyed.

Since the Allied breaking of the Enigma codes was not revealed for 30 years, some surviving Enigmas were put into service for a second time after the war by the BMdi, the Bundesministerium der Innern (Federal Ministry of the Interior) or the BGS, the Bundesgrenzschutz or the BND (Bundesnachrichtendienst). The BMDi and the BGS used the Enigmas to encipher names and birthdays etc. of persons whom they caught trying to illegally cross the borders of Germany after WWII especially in the area of the border to the east and the BND used Enigmas in security and police work. These post-war German foreign intelligence agencies refurbished some of the few surviving Enigmas with new paint and maintained and used the machines for many years after the end of WWII and into the Cold War era.



197 A THREE-ROTOR ENIGMA CIPHER MACHINE

KONSKI & KRUEGER

number A8208, with complete electrical wiring, three matching aluminum rotors II, IV, V, raised 'QWERTZ' keyboard with crackle black painted metal case, plugboard in the front with sixpatch leads,

12½ x 10 x 5½in. (32 x 26 x 14cm.)

£40,000-60,000

\$61,000-90,000 €57,000-84,000

For further information this lot, please visit www.christies.com



*198

MCFARLANE'S CALCULATING CYLINDER

SCOTTISH, CIRCA 1835

the composed of three rotating sections with printed paper scales, cartouche signed McFARLANE'S CALCULATING CYLINDER. GLASGOW.

6in. (15cm.) long

£,2,000-3,000

\$3,100-4,500 €2,900-4,200

This slide rule in the form of a cylinder would have been used to determine interest for fiscal calculations. Other examples are known in the collections of IBM and the Science Museum in London.

*199 A FRENCH SURVEYOR'S COMPASS

SECRETAN, MID 19TH CENTURY

signed to the brass telescope Secretan à Paris, in a mahogany box the four-point compass rose with scale 0-360°, half-blued needle and bubble level, supported on brass mount with ball and socket joint. 9in. (23cm.) high

€,600-900

\$910-1,400 €840-1,300







200 (detail)

*200 **DOUBLE REFRACTION APPARATUS** FRENCH, 19TH CENTURY

signed M.on. Jules Duboscq Ph Pellin Paris, screw mechanism for rotating disc 0-180-0 with vernier, hinged on compass joint on lacquered brass column on cast iron tripod case, marked with O.3. 20in. (49cm.) high

£,1,500-2,500 \$2,300-3,800 €2,200-3,500



*201

A 3-INCH REFRACTING TELESCOPE DOLLOND, EARLY 19TH CENTURY

The 2-foot long body tube bound in leather, signed on the draw Dollond London with ownership inscription Edward Gryffydh Peacock Indian Navy in original oak case with key 28in. (72cm.) long

€,1,500-2,500

\$2,300-3,800 €2,200-3,500

PROVENANCE:

Edward Gryffydh Peacock (1825-67)



*202 A LARGE GALVANOMETER BAIRD & TATLOCK, CIRCA 1910

between the two wooden wire bearing circles, a silvered dial, signed on ivorine plaque *BAIRD & TATLOCK GLASGOW AND EDINBURGH*, with six brass terminals, rotating on wooden base.

141/2in. (36cm.) high

€,700-1,000

\$1,100-1,500 €980-1,400



*203 DAY OR NIGHT TELESCOPE DOLLOND. 1891

the leather-bound brass, one draw, 2½-inch refracting, signd Dollond London, Day or Night, 6847. ROYAL NATIONAL LIFE-BOAT INSTITUTION. 1891. 21in. (54cm.) long

£,600-900

\$910-1,400 €840-1,300





*204 A GRIFFITH "CLUB" MICROSCOPE AMERICAN, LATE 19TH CENTURY

signed on base *E.H. GRIFFITH FAIRPORT N.Y. PAT.DEWC.14,86.*serial number *850* to base and inside lid of red felt-lined fitted case, the body in lacquered brass, two aluminium canisters for objective lenses.
9½in. (23cm.) wide in case

£1,500-2,500

\$2,300-3,800 €2,200-3,500

*205

A GALVANOMETER

ELLIOTT BROS., EARLY 20TH CENTURY signed to top *Elliott Bros. London. 297* in brass glazed box on bakelite, with bubble level, in original wooden case 12in. (36cm.) high in case

£700-1,000

\$1,100-1,500 €980-1,400





*206 AN AMERICAN LACQUERED BRASS MICROSCOPE BAUSCH & LOMB, POST-1876

signed BAUSCH & LOMB OPTICAL Co PAT. OCT 3. 1876. the monocular body tube with rack and pinion focus with fine-focus screw to limb, black lacquered tripod foot, with two objectives, two eyepieces and small drawer of accessories, printed paper table for linea magnifying powers to door, Microscope No. 1995, in original wooden case

12in. (30cm.) high in case

£600-900

\$910-1,4 €840-1,3

*207

AN AMERICAN MICROSCOPE

GEORGE WALE, CIRCA 1876

The brass monocular microscope on cast iron foot, signed to the stage GEO. WALE PAT. JUNE 6. 1876, the twp objectives marked HISTOLOGICAL SERIES, in fitted wooden case.

14in. (36cm.) high in case

€,600-900

\$910-1,400 €840-1,300





*208 AN ENGLISH CIRCUMFERENTOR HENRY EDGWORTH, CIRCA 1780

the brass alidade with vernier for scale 0-360°, the glazed compass with another brass degree scale and a printed 32-point rose with 0-90°-0-90° signed *H EDGWORTH MAKER BRISTOL*

7in. (18cm.) dimater

€,700-1,000

\$1,100-1,500 €980-1,400

*209 A BRASS AND MARBLE CANNON DIAL OR NOON GUN

K. BERENT, MID 19TH CENTURY

signed *K. BERENT* to the circular marble base engraved with horizontal dial IV–XII–VIII, and *M.C.W.U W.WARSZAWIE*, brass gnomon, mortar, lens on two arms, one quadrant arc marked with calendrical scale, on later wooden base.

7in. (18cm.)

£,1,000-1,500

\$1,600-2,300 €1,500-2,100

PROVENANCE:

Charles Millter Ltd., 26 October 2011, lot 167





*210 AN AMERICAN SURVEYOR'S COMPASS

LATE 18TH CENTURY

The wooden body of the circumferentor with trough compass and graduated brass scale o-90°-o for alidade that screws to side when not in use.

11½in. (29cm.) wide

€,700-1,000

\$1,100-1,500 €980-1,400

*211 AN AIR PUMP

ALOIS KREIDL, PRAGUE; 19TH CENTURY

the lacquered brass mechanism on walnut verneered base with maker's (or retailer's) plaque, with old collection labels and painted inventory numbers with a domed alarm clock with electrical contacts, to demonstrate conditions in vacuum.

19in. (48cm.) long

£,1,000-1,500

\$1,600-2,300 €1,500-2,100





*212 AN AMERICAN SURVEYOR'S COMPASS

1790

The circumferentor with wooden body, dated to reverse *1790*, brass degree scale 0-90°-0, the alidade secured to sides with screw hold when not in use, blued compass needle in glazed recess.

9in. (23cm.) long

£800-1,200

\$1,300-1,800 €1,200-1,700

*213 A MINIATURE ASSAY BALANCE PROBABLY BY H. KOHLBUSCH, LATE 19TH CENTURY

The scales in glazed case, agate topped screws, weights and accessories in drawer. 9½in. (24cm.) high

€,600-900

\$910-1,400 €840-1,300







*214 **CROOKES TUBE** CASELLA, LATE 19TH CENTURY the triple bulbed tube of uranium glass signed Crookes Radiant Matter Tube 3 inch Spark No 2a L. Casella London

5in. (13cm.) long

€,800-1,200

\$1,300-1,800 €1,200-1,700

*215 A LACQUERED BRASS **SPECTROSCOPE** JOHN BROWNING, LATE-19TH **CENTURY**

signed John Browning LONDON the horizontal circle with 0-140° scale and vernier, raised on a brass column from a splayed tripod foot, in original fitted mahogany case. 15in. (38cm.) high in case

€,600-900

\$910-1,400 €840-1,300



215



*216 A SURGICAL SET MAW & SON. CIRCA 1880

each piece stamped *S. MAW & SON LONDON & THOMPSON*, the set complete in fitted felt-lined case 16in. (41cm.) long in case

€,700-1,000

\$1,100-1,500 €980-1,400

*217

AN AMERICAN SURGICAL SET A.S. ALOE, LATE 19TH CENTURY

the large steel instruments stamped with maker's mark, in fitted case with label A.S.ALOE-CO MANUFACTURERS OF SURGICAL INSTRUMENTS 415 N.BROADWAY ST.LOUIS 15in. (38cm.)

€,700-1,000

\$1,100-1,500 €980-1,400





218 FOUR-VANE SURVEYING CIRCLE

PIERRE SEVIN, 1672

the brass body with two non-linear scales below signature Pierre Sevin APairs 1672, the circumeference with two scales 0-180°-0, the inner divided to ½°, an eight point compass rose to alidade 7½in. (19cm.) diam.

£,2,000-3,000

\$3,100-4,500 €2,900-4,200

~219 A CABINET OF MICROSCOPE SLIDES

ENGLISH, 19TH CENTURY

seven drawers with ivory handles, approximately 40 slides in each of the six drawers including five microphotographs 16in. (41cm.) high

£,1,000-1,500

\$1,600-2,300 €1,500-2,100





~220 AN IVORY DIPTYCH DIAL

GERMAN, 1607

scale for high tides to leaf 1a, dated 1607 above painted miniature on leaf 1b, hour scale and paper compass to leaf 2a, scale for lunar age to leaf 2b 2½in. (6.5cm.) long

£3,000-5,000

\$4,600-7,500 €4,300-7,000

Related to a small group of sundials made in Germany for the Spanish market, e.g. AST0431 at the Royal Museums Greenwich & Inv. no. 86396 at the Museum of the History of Science, Oxford.

~221

A CASED BREWSTER STEREOSCOPIC VIEWER

T. R. WILLIAMS, CIRCA 1870

signed on ivory plaque T.R. WILLIAMS 236 REGENT ST with 47 cards, of which two are tintypes signed on the reverse London & Paris Stereoscopic Agency 302 Regent St. & South Gallery Crystal Palace

12in. (30cm.) wide (3)

€,1,000-1,500 \$1,600-2,300 €1,500-2,100

PROVENANCE:

Thomas Augustus Wolstenholme Parker, 6th Earl of Macclesfield (1811-1896), Shirburn Castle, Oxfordshire.

Thence by descent at Shirburn Castle





VARIOUS PROPERTIES

222

A PAIR OF BRASS AND STEEL TIPPED GUNNER'S CALLIPERS

GERMAN, 18TH CENTURY

inscribed *Visirung des feuer gewehrs der Infantrie Nachiootheit des Nurnb: Zolls.* to the front with five scales, the reverse with further five

8¾in. (22cm.) long

£1,000-1,500

\$1,600-2,300 €1,500-2,100

a few light scratches and finger marks etched to the patina, else very good condition

~223 SHAGREEN CASE OF DRAWING INSTRUMENTS GEORGE ADAMS JR, CIRCA 1770

the complete set of instruments with ivory rule for *Hanoverian French Roman* and *English* inches, ivory protractor signed *Geo: Adams. No.60.Fleet. Street,London* and ivory sector signed *G Adams London* 5in. (13cm.) high

€1,500-2,500

\$2,300-3,800 €2,200-3,500



CONDITIONS OF SALE · BUYING AT CHRISTIE'S

These Conditions of Sale and the Important Notices and Explanation of Cataloguing Practice set out the terms of the we offer the lost listed in this catalogue for sale. By registering to bid and/or by bidding at auction you garee to these terms, so you should read them carefully before doing so. You will find a glossary at the end explaining the meaning of the words and expressions

Unless we own a lot (A symbol, Christie's acts as agent for the seller.

DESCRIPTION OF LOTS

(a) Certain words used in the catalogue description have special meanings. You can find details of these on the page headed "Important Notices and Explanation of Cataloguing Practice" which forms part of these terms. You can find a key to the Symbols found next to certain catalogue enties under the section of the catalogue called "Symbols Used in this Catalogue".

(b) Our description of any lot in the catalogue, any condition report and any other statement made by us (whether orally or in writing) about any lot, including about its nature or condition, artist, period, materials, approximate dimensions or **provenance** are our opinion and not to be relied upon as a statement of fact. We do not carry out in-depth research of the sort carried out by professional historians and scholars. All dimensions and weights are approximate only

2 OUR RESPONSIBILITY FOR OUR DESCRIPTION OF LOTS

We do not provide any guarantee in relation to the nature of a **lot** apart from our **authenticity warranty** contained in paragraph E2 and to the extent provided in paragraph I below.

3 CONDITION

(a) The condition of lots sold in our auctions can vary widely due to factors such as age, previous damage, restoration, repair and wear and tear. Their nature means that they will rarely be in perfect **condition**. **Lots** are sold 'as is', in the **condition** they are in at the time of the sale, without any representation or warranty or assumption of liability of any kind as to condition by Christie's or by the seller.

(b) Any reference to condition in a catalogue entry or in a condition report will not amount to a full description of condition, and images may not show a lot clearly. Colours and shades may look different in print or on screen to how they look on physical inspection. Condition reports may be available to help you evaluate the condition of a lot. Condition reports are provided free of charge as a convenience to our buyers and are for guidance only. They offer our opinion but they may not refer to all faults, inherent defects, restoration, alteration or adaptation because our staff are not professional restorers or conservators. For that reason they are not an alternative to examining a **lot** in person or taking your own professional advice. It is your responsibility to ensure that you have requested, received and considered any **condition** report.

4 VIEWING LOTS PRE-AUCTION

(a) If you are planning to bid on a **lot**, you should inspect it personally or through a knowledgeable representative before you make a bid to make sure that you accept the description and its **condition**. We recommend you get your own advice from a restore professional adviser.

(b) Pre-auction viewings are open to the public free of charge. Our specialists may be available to answer questions at pre-a viewings or by appointment.

5 ESTIMATES

Estimates are based on the condition, rarity, quality and provenance of the lots and on prices recently paid at auction for similar property. Estimates can change. Neither you, nor anyone else, may rely on any estimates as a prediction or guarantee of the actual selling price of a lot or its value for any other purpose. Estimates do not include the buyer's premium or any applicable taxe

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 inter-national 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 germmological 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.

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 aboratories, 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 to the gemstone. Reports from European gemmological laboratories will describe any 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.

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 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 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 is in good working order. Certificates are not available unless described in the catalogue.

(c) Most wristwatches have been opened to find out the type and quality of movement. For that reason, wristwatches 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(h).

B REGISTERING TO BID

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 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 of equivalent document(s) showing your name and registered address together with documentary proof of directors and beneficial owners;

(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 sak you for current identification as described in paragraph SIG) 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 (10)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

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

accept personal naminy to pay the partnesse price ain an other sums due. Further, you warrant that: 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 you 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 thirdparties 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 critics or

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 an 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** 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

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™

(o) marine bus on Linstee & Live
For certain auctions we will accept bids over the Internet. Please
visit www.christles.com/livebidding and click on the 'Bid Live'
cion 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

(c) Written Bids

(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. 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 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 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

AT THE SALE

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.

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

3 AUCTIONEER'S DISCRETION

The auctioneer can 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 RIDDING

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 RIDDING ON REHALF OF THE SELLER

The auctioneer may, at his or her sole option, bid on behalf of the Ine auctioneer may, at nis 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 will not entire 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

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 Christies LIVETM) 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 ving 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

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. pay us a buyer 5 perinding the naminer price up to and including £100,000, 20% on that part of the hammer price up to and including £100,000, 20% on that part of the hammer price over £100,000 and up to and including £2,000,000, and 12% of that part of the hammer price above £2,000,000.

The successful bidder is responsible for any applicable tax including any VAT, sales or compensating use tax or equivalent tax wherever they 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 in 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 7839 9060 (email: VAT_london@christies.com, fax: +44 (0)20 3219 6076).

3 ARTIST'S RESALE ROYALTY

or nation SAESALE RUFALITY
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 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

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

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 response. 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 satisfy 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 werearth are as follows: warranty are as follows:

(a) It will be honoured for 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 Heading of one of the terms listed in the section titled Qualified
Headings on the page of the catalogue headed 'Important Notices Headings on the page of the catalogue neaded important Notices and Explanation of Cataloguing Practice. For example, use of the term 'ATTRIBUTED TO...' in a **Heading** means that the **lot** is in Christies opinion probably a work by the named artist but in owarranty 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

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 the original buyer has owned the lot continuously between the date of the auction and the date of claim. It may not be transferred to anyone else.

(h) In order to claim under the authenticity warranty you must (i) give us written details, including full supporting evidence, of any claim within five years of the date of the auction;

(iii) at Christie's option, we may require you to provide the written opinions of two recognised experts in the left of the lot mutually agreed by you and us in advance other field of the lot 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 sale room at which you bought it in the same **condition** as at the time of sale, within 14 days of the date of the sale.

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 the sale of the sale of the sale of the sale of the sale 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 IdC is a forgery. Christies 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 twelve (12) months of the date of the accions. 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 E2h(iii) above. Paragraphs E2(b), (c), (d), (e), (f) and (g) and (i) also apply to a claim under these categories.

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

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:

Tou must make payments to: Lloyds Bank PIc, 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. To make a 'cardholder not present' (CNP) payment, you must complete a CNP authorisation form which you can get from our Cashiers Department. You must send a completed CNP authorisation form by fax to +44 (0)20 7389 2869 or by post to the address set out in paragraph (d) below. If you want to make a CNP payment over the telephone, you must call +44 (0)20 7839 9060. CNP payments cannot be accepted by all salerooms and are subject to certain restrictions. Details of the conditions and restrictions applicable to credit card payments are available from our Cashiers Department, whose details are set out in paragraph (d) below. (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, your invoice number and client 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 6OT

(e) For more information please contact our Cashiers Department by phone on +44 (0)20 7839 9060 or fax on +44 (0)20 7389 2869.

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.

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):

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

(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;

accepting any bids; (with cereives 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 interests or in any other way as permitted by the law of the place where such property is located. You will be derined to whe granted such security to us and we may retain such property as collateral security for your obligations to us, and (ii) 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 well as the rights set out in +4 above, we can use or lead 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 self 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

page and or an incimation state which you can get morn the blober registration staff or Christie's cashiers on +44 (0)20 7839 9060. (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

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

H TRANSPORT AND SHIPPING

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, transporters or experts i ryou ask us to a os. For more information, please contact Christie's Art Transport on +44 (10)20 7839 9060. See the information set out at www.christies.com/shipping or contact us at 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 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.

(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 left prior to bidding. If you are refused a licence or there is a delay in getting one, you must still pay us intelligence or there is a delay in getting one, you must still pay us intelligences 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 or contact us at arttransport_london@christies.com.

(b) Lots made of protected species

(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 to import property containing these materials, and some other countries require a license from the relevant regulatory acencies 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 cases, the for can only be shipped with an independent scentific 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 rotected or regulated material.

(c) US import ban on African elephant ivory

The USA prohibits the import of ivory from the African elephant. Any bot containing elephant wory or other wildlife material that could be easily confused with elephant wory for example, mammoth wory, walrus wory, helmeted hornbill wory) 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 wory. 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 depotent we will get be a first the scientific test. elephant, we will not be obliged to cancel your purchase and refund the purchase price.

(d) Lots containing material that originates from Burma (Myanmar) Lots which contain rubies or jadeite originating in Burma (Myanmar) may not generally be imported into the United States. As a convenience to US buyers, lots which contain rubies or jadeite of Burmese or indeterminate origin have been marked with the symbol ψ in the catalogue. In relation to items that contain any other types of gemstones originating in Burma (e.g. sapphires) such items may be imported into the United States provided that the gemstones have been mounted or incorporated into jewellery outside of Burma and provided that the setting is not of a temporary nature (e.g. a string)

(e) Lots of Iranian origin

Some countries prohibit or restrict the purchase and/or import of Iranian-origin 'works of conventional craftsmanship' (works that are 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 Det 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

Gold of less than 18ct does not qualify in all countries as 'gold' and

may be refused import into those countries as 'gold'.

(g) Jewellery over 50 years old

Under current laws, jewellery over 50 years old which is worth £34,300 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.

(i) 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**.

OUR LIABILITY TO YOU

(a) We give no warranty in relation to any statement made, or (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 warranties contained in paragraph E1 are their own and we do not have any liability to you in relation to those warranties.

We are not responsible to you for any reason (who 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 out in these Conditions of Sale; or

out in these continuous of sale; or (ii) 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 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 nnection 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.

OTHER TERMS

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 videotage and record proceedings at any auction. We will We may vueotape and reactor proceedings at any auction. We will keep any personal information confidential, except to the settent disclosure is required by Jaw. However, we may, through this process, use or share is 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 policy at **www.christies.com**.

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**. 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.

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 cribed 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 er 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 the Medings means the section head of Qualified Headings on the page of the catalogue headed "important Notices and Explanation Cataloguing Practice:

reserve: the ordifiential 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, 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 pavable

| Symbol | |
|--------------|---|
| No Symbol | We will use the VAT Margin Scheme. No VAT will be charged on the hammer price . VAT at 20% will be added to the buyer's premium but will not be shown separately on our invoice. |
| t | We will invoice under standard VAT rules and VAT will be charged at 20% on both the hammer price and buyer's premium and shown separately on our invoice. |
| θ | For qualifying books only, no VAT is payable on the hammer price or the buyer's premium. |
| * | An amount in lieu of the import tax is applied to the hammer price and is at the reduced rate of 5%. Vat is charged at 20% on the buyer's premium but will not be shown separately on the invoice. These lots have been imported from outside of the EU for sale and placed under the Temporary Admission regime. |
| Ω | An amount in lieu of the import tax is applied to the hammer price and is at the standard rate of 20%. Vat is also charged at 20% on the buyer's premium but will not be shown separately on the invoice. Where applicable Customs duty will be charged (as per the rate specified by HMRC guidance) on the hammer price and Vat will be payable at 20% on the customs duty. These lots have been imported from outside of the EU for sale and placed under the Temporary Admission regime. |
| α | The VAT treatment will depend on whether you have registered to bid with an EU or non-EU address: If you register to bid with an address within the EU you will be invoiced under the VAT Margin Scheme (see No Symbol above). If you register to bid with an address outside of the EU you will be invoiced under standard VAT rules (see * symbol above) |
| ‡ | 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 hammer . If you choose to buy the wine out of bond Excise Duty as applicable will be added to the hammer price and Clearance VAT at 20% will be charged on the Duty inclusive hammer price . 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

| A non VAT registered UK or EU buyer | | No VAT refund is possible | |
|--|----------------------|--|--|
| UK VAT registered No symbol and α | | The VAT amount in the buyer's premium cannot be refunded. However, on request we can re-invoice you outside of the VAT Margin Scheme under normal UK VAT rules (as if the lot had been sold with a * symbol). Subject to HMRC's rules, you can then reclaim the VAT charged through your own VAT return. | |
| | \star and Ω | Subject to HMRC's rules, you can reclaim the Import VAT charged on the hammer price through your own VAT return when you are in receipt of a C79 form issued by HMRC. The VAT amount in the buyer's premium 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 lot had been sold with a * symbol) then, subject to HMRC's rules, you can reclaim the VAT charged through your own VAT return. | |
| EU VAT registered buyer | No Symbol and α | The VAT amount in the buyer's premium cannot be refunded. However, on request we can re-invoice you outside of the VAT Margin Scheme under normal UK VAT rules (as if the lot had been sold with a * symbol). See below for the rules that would then apply. | |
| | t | If you provide us with your EU VAT number we will not charge VAT on the buyer's premium . We will also refund the VAT on the hammer price if you ship the lot from the UK and provide us with proof of shipping, within three months of collection. | |
| | * and Ω | The VAT amount on the hammer and in the buyer's premium cannot be refunded. However, on request we can re-invoice you outside of the VAT Margin Scheme under normal UK VAT rules (asi if the Dit had been sold with a 1 symbol). See above for the rules that would then apply. | |
| Non EU buyer | | If you meet ALL 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 buyer's premium . | |
| | † 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 hammer price providing you export the wine while 'in bond' directly outside the EU using an Excise authorised shipper. 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. | |
| | * and Ω | An amount in lieu of the Import VAT will be refunded on the hammer and an amount in lieu of the VAT in the premium will be refunded. Customs Duty when applicable is also reclaimable. | |

- 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 Q 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 Vshipping are available from our Vshipping are of 250.00 per invoice to check shipping/export documents. We will waive this processing fee if you appoint Christie's Shipping Department to arrange Durue xport/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 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. You should take professional advice if you are unsure how this may affect you.
- 7. All reinvoicing 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'.

0

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

Λ

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. ι

Lot containing jadeite and rubies from Burma or of indeterminate origin. See Section H2(d) of the Conditions of Sale.

?. \star . Ω . α . #. \ddagger

See VAT Symbols and Explanation.



See Storage and Collection Pages on South Kensington sales only.

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 AND EXPLANATION OF CATALOGUING PRACTICE

CHRISTIE'S INTEREST IN PROPERTY CONSIGNED FOR AUCTION

A 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 Δ 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 o 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 °e.

The third party will be remunerated in exchange for accepting this risk based on a fixed fee if the third party is the successful bidder or on the final hammer price in the event that the third party is not the successful bidder. The third party may also bid for the lot above the written bid. Where it does so, and is the successful bidder, the fixed fee for taking on the guarantee risk may be netted against the final purchase price.

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 profifed 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.

BOOKS

If, on collation, any named item in this catalogue proves defective in text or illustration, the lot may be returned within 14 days of the sale with the defect stated in writing. This proviso shall not apply to defects stated in the catalogue or announced at the time of sale; nor to 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 text or illustration; nor to drawings, autographs, letters or manuscripts, signed photographs, music, atlases, maps or periodicals; nor to books not identified by title; nor to lots sold without printed estimates or described in the catalogue as sold not subject to return. Buyers are advised to clear their lots within ten days of the sale or storage charges will be incurred.

Please note the Conditions of Sale printed at the end of this catalogue.

STORAGE AND COLLECTION

COLLECTION LOCATION AND TERMS

Specified lots (sold and unsold) marked with a filled square () not collected from Christie's by 5.00 pm on the day of the sale will, at our option, be removed to Cadogan Tate Ltd. 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 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 Cadogan Tate Ltd, 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 Cadogan Tate Ltd. All collections from Cadogan Tate Ltd. will be by pre-booked appointment only.

Tel: +44 (0)20 7839 9060

Email: 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 may 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. 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.

| ADMINISTRATION FEE, STORAGE & RELATED CHARGES | | | | | | | |
|--|---|--|--|--|--|--|--|
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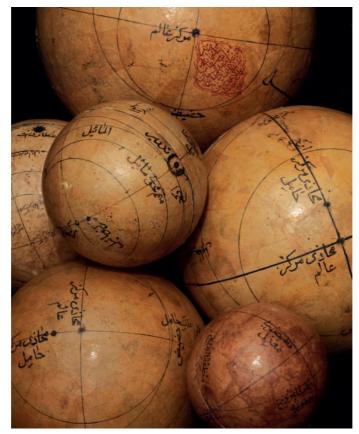
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UKE20,000 to UKE30,000 by UKE2,000s
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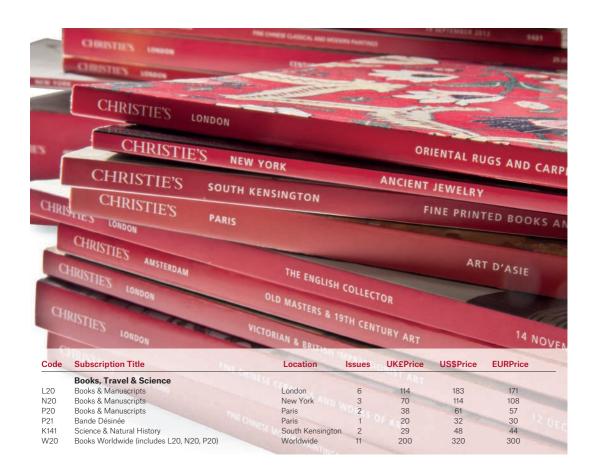
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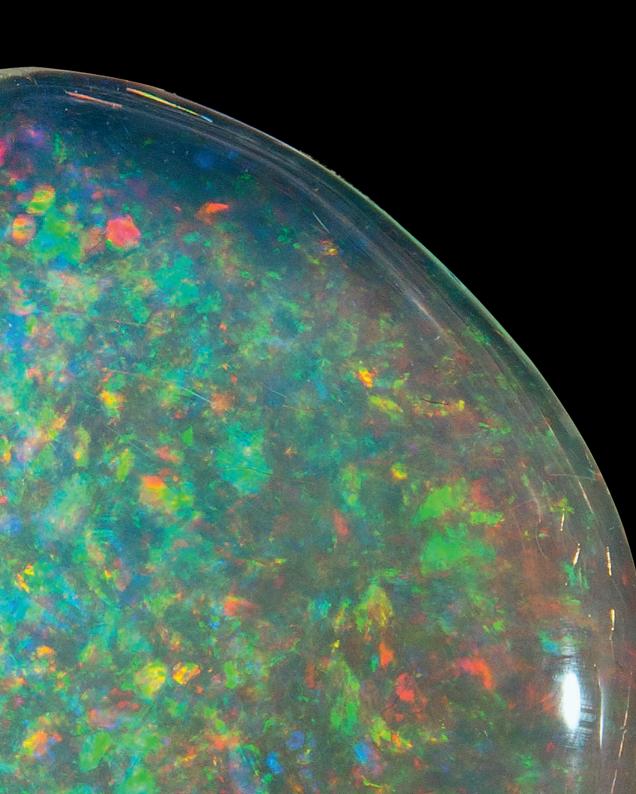
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