



A
B
C

THE METEORITE COLLECTION.

A, The Casus Grandes Meteorite Iron; B, Tucson Meteorite Iron; C, Canyon Diablo Meteorite Iron.

DESCRIPTIVE CATALOGUE OF THE METEORITE COLLECTION
IN THE UNITED STATES NATIONAL MUSEUM, TO JANUARY
1, 1902.

BY WIRT TASSIN,
Assistant Curator, Division of Mineralogy.

INTRODUCTORY NOTE.

The following catalogue has been prepared by Mr. Tassin mainly to facilitate exchanges and to aid in the building up of the collection, as was a former issue compiled by Prof. F. W. Clarke and printed in the Annual Report of the National Museum for 1885-86 (1889).

For purposes of ready reference, however, the alphabetical arrangement adopted by Wulffing is adhered to. For the same reason the samples belonging to the Shepard collection are included with those of the Museum proper, but always with the proper reference. Where a meteorite is represented in both collections, that belonging to the Museum is first mentioned.

As will be noted, the combined collections now represent 348 falls and finds, of which 143 are irons.

GEORGE P. MERRILL,
Head Curator, Department of Geology.

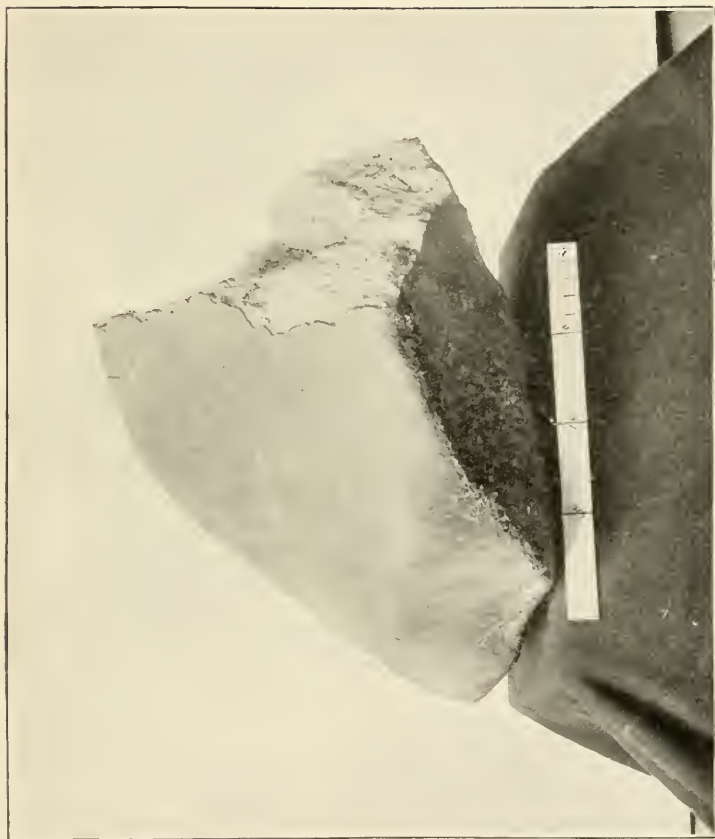


DESCRIPTIVE CATALOGUE OF THE METEORITE COLLECTION
IN THE UNITED STATES NATIONAL MUSEUM TO JANUARY
1, 1902.

By WURT TASSIX,
Assistant curator, Division of Mineralogy.

- Abert*, Iron. Weight, 150 grams. Section of mass. One face etched, showing coarse Widmanstätten figures. Locality unknown; found without label in a collection of minerals belonging to Col. J. J. Abert. Catalogue number, 44363. Gift of J. T. Abert.
- Fragment. Weight, 11.3 grams. The Shepard Collection, No. 20.
- Admire*, Kansas. Stony iron. Weight, 5,460 grams. Catalogue number, 84798. Weight, 6,725 grams. Catalogue number, 84802. Weight, 2,048 grams. Catalogue number, 84812. Weight, 432 grams. Catalogue number, 84813. Gift of W. C. Davis.
- Agou* [Brethon, near Castelmoron], Lot-et-Garonne, France. Stone. Weight, 38 grams. Fell September 5, 1814. Fragment from interior. Ground mass light ash-gray, traversed by numerous streaks or veins of a darker color. Ground mass much fractured and containing white chondrules and metallic grains. Catalogue number, 84740.
- Alais*, Gard, France. Stone. Weight, 0.60 gram. Fell March 15, 1806, 5 p. m. Carbonaceous. A dark brown powder and some friable fragments. The Shepard Collection, No. 133.
- Allaveto*, near Modena, Italy. Stone. Weight, 1 gram. Fell July, 1766. Fragment from interior. Ground mass light gray. The Shepard Collection, No. 124.
- Albuquerque*, New Mexico. Iron. Weight, 58.61 grams. Found 1884. (a) Section; weight, 0.56 gram, with original and etched surfaces. Catalogue number, 44372. Gift of Richard Pearce. (b) Turnings; weight, 2.61 grams. Catalogue number, 46615. Gift of L. G. Eakins.
- Alexander County*, North Carolina. Iron. Weight, 12.3 grams. Found 1860. Fragment, etched; etching develops large plates of tenite. The Shepard Collection, No. 82.
- Alfianello*, near Pontefico and Brescia, Cremona, Italy. Stone. Weight, 61.3 grams. Fell February 16, 1883, 3 p. m. Fragment from interior. Ground mass ash-gray flecked with rust and containing chondrules and metallic grains. Structure, fine granular. Catalogue number, 46625.
- Two fragments from interior. Weight, 29.54 grams. The Shepard Collection, No. 237.
- Allegan*, Thomas Hill, Saugatuck road, Allegan County, Michigan. Stone. Weight, 30 kilograms. Fell July 10, 1899. (See Plate 2.)
- Anderson*, Little Miami Valley, Hamilton County, Ohio. Stony iron. Weight, 14.8 grams. Fragment. The iron matrix contains nodules of stony matter. Found in an Indian mound, No. 3 of the Turner group. Catalogue number, 47391. Gift of Peabody Museum of American Archaeology.

- Angers*, Maine-et-Loire, France. Stone. Weight, 0.72 gram. Fell June 3, 1882. Fragments from interior. The Shepard Collection, No. 147.
- Angra dos Reis*, Rio, Brazil. Stone. Weight, 8.57 grams. Fell January, 1869. Fragment with shining black crust. Ground mass dark brown, containing few, if any, chondrules, and no metallic grains. Structure, fine granular. Catalogue number, 47649.
- Assam*, India. Stone. Weight, 7 grams. Found 1846. Dark ash-gray fragment with crust; gray chondrules. The Shepard Collection, No. 168.
- Assisi*, near Perugia, Italy. Stone. Weight, 29 grams. Fell May 24, 1886. Fragment with crust. Ground mass ash gray, containing chondrules and metallic grains. The Shepard Collection, No. 239.
- Auburn*, Macon County, Alabama. Iron. Weight, 29 grams. Found 1867. Fragment. Catalogue number, 46067.
- Eight fragments. Weight, 228.15 grams. The Shepard Collection, No. 76.
- Augustinorka*, Ekaterinoslav, Russia. Iron. Weight, 70 grams. Found 1890. Rectangular slice 9.5 by 2.5 cm. Etched surface showing typical Widmanstätten figures. Catalogue number, 84690. (a) Oxidized fragment; weight, 50 grams. (b) Oxidized fragment; weight, 24 grams. (c) Unoxidized fragment; weight, 7 grams. The Shepard Collection, No. 245.
- Aumiers*, Canton Massegras, Lozère, France. Stone. Weight, 0.45 gram. Fragment. Fell June 3, 1842. Fragment. The Shepard Collection, No. 165.
- Aussun* (Clarac), Montréjeau, Haute Garonne, France. Stone. Weight, 20.1 grams. Fell December 9, 1858. Two fragments, one showing crust. Ground mass ash gray flecked with rust and containing light and dark chondrules and metallic grains. The Shepard Collection, No. 185.
- Babbs Mill*, Green County, Tennessee. Iron. Weight, 38.4 grams. Known 1842. Catalogue number, 47339.
- Three specimens; weight, 20.63 grams. (a) Small fragment. (b) Vial of filings. (c) Vial of turnings. The Shepard Collection, No. 34.
- Bachant* (Alexejevka), Ekaterinoslav, Russia. Stone. Weight, 8.6 grams. Fell February 15, 1814. Fragment with crust and polished surface. Ground mass greenish gray with numerous metallic grains and chondrules. The metallic portion is more or less oxidized. The Shepard Collection, No. 142.
- Bairds Plantation*, Asheville, Buncombe County, North Carolina. Iron. Weight, 2.95 grams. Found 1839. Three fragments. The Shepard Collection, No. 29.
- Ballinoo* (10 miles south of), Murchison River, West Australia. Iron. Weight, 122 grams. Found 1892. Etched surface has a stippled appearance overlaid with a network of fine lines. The Shepard Collection, No. 104.
- Weight, 1,266 grams. Found 1893. Cross section of mass. One face etched, showing Widmanstätten figures so small that to the unaided eye the surface has a granular or stippled appearance. The surface shows two large, and several small troilite nodules, and the mold of another. Catalogue number, 84809.
- Bandong*, Goemoroeh, Perang, Java. Stone. Weight, 1.6 grams. Fell December 10, 1871, 1.30 p. m. Fragment with crust. Catalogue number, 46079.
- Fragment. Weight, 50.87 grams. Pitted dull-black crust. Ground mass ash gray, containing chondrules, grains of nickel, iron, and troilite, some of them quite large. The Shepard Collection, No. 212.
- Barbotan*, Roquefort, Gascogne, France. Stone. Weight, 28.7 grams. Fell July 24, 1790, 9 p. m. Section showing crust. Ground mass light gray and containing chondrules and numerous metallic grains. The Shepard Collection, No. 126.
- Bath*, Brown County, South Dakota. Stone. Weight, 25 grams. Fell August 29, 1892. Fragment with crust and polished surface. Crust dull black, papillated and somewhat blebby. Ground mass ash gray flecked with rust and containing metallic grains and chondrules. Fine granular, compact. Catalogue number, 83462.



THE ALLEGAN METEORITE.

FOR DESCRIPTION SEE PAGE 675.

- Bear Creek*, Jefferson County (?), Colorado. Iron. Weight, 27.73 grams. Found 1866. Thin section polished and etched, Widmanstätten figures good, tenite plates distinct. Catalogue number, 46605. Section of mass (weight, 117.20 grams), showing troilite nodule. Section (weight, 62.05 grams) with well-marked Widmanstätten figures and distinct plates of tenite. Two vials of fragments, showing octahedral cleavage. Total weight, 307.08 grams. The Shepard Collection, No. 75.
- Bearer Creek*, West Kootenai District, British Columbia. Stone. Weight, 330.5 grams. Fell May 26, 1893, 3 p. m. Mass with dull black, papillated crust. Interior dark ash gray, containing chondrules and metallic grains. Structure coarse granular. Catalogue number, 81155. Gift of James Hislop, through E. E. Howell.
- Bella Roca*, Sierra de San Francisco, Santiago Papasquiaro, Durango, Mexico. Iron. Weight, 152 grams. Found 1888. Irregularly shaped fragment, containing a cast of a large troilite nodule. One surface etched, showing Widmanstätten figures and scattering flakes of troilite. Catalogue number, 48346.
- Bemdegó*, Monte Santo, Bahia, Brazil. Iron. Weight, 102 grams. Found 1784. The Shepard Collection, No. 8.
- Benares*, Krakhut, Bengal, India. Stone. Weight, 1 gram. Fell December 19, 1798, 8 p. m. Fragment. Catalogue number, 46076. Fragment with crust. Weight, 7.32 grams. Polished surface shows chondrules and scattered metallic grains. The Shepard Collection, No. 131.
- Bischtübe*, Nikolaev, Turgai, Russia. Iron. Weight, 1,502.59 grams. Found 1888. Cross section of mass. One face etched, showing large, coarse Widmanstätten figures, numerous small plates and nodules of schreibersite, and some troilite. Catalogue number, 84718.
- Bishopville*, Sumter County, South Carolina. Fragment from interior. Weight, 102 grams. Catalogue number, 84697.
Stone. Weight, 1,090.4 grams. Fell March 25, 1843. Mass with grayish vitreous crust. One vial of chladnite. The Shepard Collection, No. 166.
- Bitburg* (Albacher Mühle), Rhenish Prussia, Germany. Pallasite. Weight, 22 grams. Found 1802. Fragment. Catalogue number, 47739. Gift of R. de Kroustchoff.
- Bjelaja Zerkor*, Ukraine, Kiev, Russia. Stone. Weight, 10.4 grams. Fell January 16, 1796. Fragment from interior. Ground mass ash gray deeply stained with rust. Catalogue number, 81175.
- Bjelokrymitchie*, Volhynia, Russia. Stone. Weight, 7.7 grams. Fell January 1, 1887. Fragment from interior, one surface polished. Ground mass rust-brown from oxidation and containing numerous metallic grains. Structure chondritic. Catalogue number, 84598.
- Bjurböle*, South coast of Finland. Stone. Weight, 620 grams. Fell March 12, 1899. Fragments with crust. Crust surface dull black; in swellings and showing well-marked lines of flow. Ground mass ash gray, flecked with rust, and containing numerous large chondrules and scattering grains of troilite and nickel iron. The mass is traversed by three metallic veins. Catalogue number, 84771.
- Bohumilitz*, Bohemia, Austria. Iron. Weight, 0.95 gram. Found 1829. Fragment with original surface. One side etched to show Widmanstätten figures. The Shepard Collection, No. 21.
- "*Bouanza*," Bolson de Mapimi, Mexico. Iron. Weight, 238.6 grams. Found 1837. Two fragments etched. The Shepard Collection, No. 27.
- Borkut*, Marmaros, Hungary. Stone. Weight, 2 grams. Fell October 13, 1852, 3 p. m. Fragment from interior. Ground mass dark ash gray, containing numerous chondrules and metallic grains. Catalogue number, 82752.

Bozett, Wilson County, North Carolina. Stone. Weight, 9 grams. Fell May 24, 1892. Fragment. Crust dull black and papillated. Ground mass dark ash gray and containing metallic grains and gray chondrules. Catalogue number, 51670. Gift of B. E. Barnes.

Brahin, Minsk, Russia. Pallasite. Weight, 14 grams. Found 1810. Fragment of the iron matrix from which all the stony matter has disappeared. Catalogue number, 47741.

Weight, 5.13 grams. Fragment of iron matrix from which the stony matter has disappeared. The Shepard Collection, No. 118.

Braunau, Hauptmannsdorf, Bohemia, Austria. Iron. Weight, 7.35 grams. Fell July 14, 1847, 3.45 a. m. Fragment. Catalogue number, 46511.

Rectangular section containing troilite nodule. Etched surface shows a network of fine lines. Weight, 14.5 grams. The Shepard Collection, No. 45.

Breunersörde (Gnarrenburg), Hanover, Germany. Stone. Weight, 12 grams. Fell May 13, 1855. Crust brownish black. Ground mass dark ash gray, containing gray chondrules and few metallic grains. Catalogue number, 48432.

Brenham, Kiowa County, Kansas. Stony iron. Weight, 720 grams. Found 1890.

(a) Mass having one surface polished; structure porous, having the sponge-like pores filled with olivine. (b) Section; the metallic matrix contains nodules of olivine and troilite. Catalogue numbers, (a) 49073, gift of George F. Kunz; (b) 51347, gift of Robert Hay.

Weight, 430 grams. Found 1890. Polished slice showing a sponge-like metallic matrix with olivine filling the cavities. The Shepard Collection, No. 120.

Burlington, Cooperstown, Otsego County, New York. Iron. Weight, 76.87 grams. Plowed up before 1819. Fragment, one surface etched showing Widmanstätten figures. Catalogue number, 46064.

Two pieces—larger one showing original surface. One face etched. Weight, 1,503.3 grams. Smaller one containing drill hole. Etched on three faces. Weight, 1,528.3 grams. The Shepard Collection, No. 19.

Bustee, Goruckpur, India. Stone. Weight, 0.2 gram. Fell December 2, 1852. Fragment. The Shepard Collection, No. 176.

Butler, Bates County, Missouri. Iron. Weight, 270 grams. Found 1874. Section 7.5 by 5.5 by 1.1 cm. One surface polished, showing troilite nodule. Catalogue number, 47337.

Section showing original surface. Etched face shows comb-like markings made up of fine lines. Widmanstätten figures very distinct. Minute nodules of troilite are scattered over the surface. Weight, 391 grams. The Shepard Collection, No. 86.

Butsura, Goruckpur, India. Stone. Weight, 11 grams. Fell May 12, 1861. Fragment with crust; ground mass stained deep brown from oxidation of metallic particles. Catalogue number, 47334.

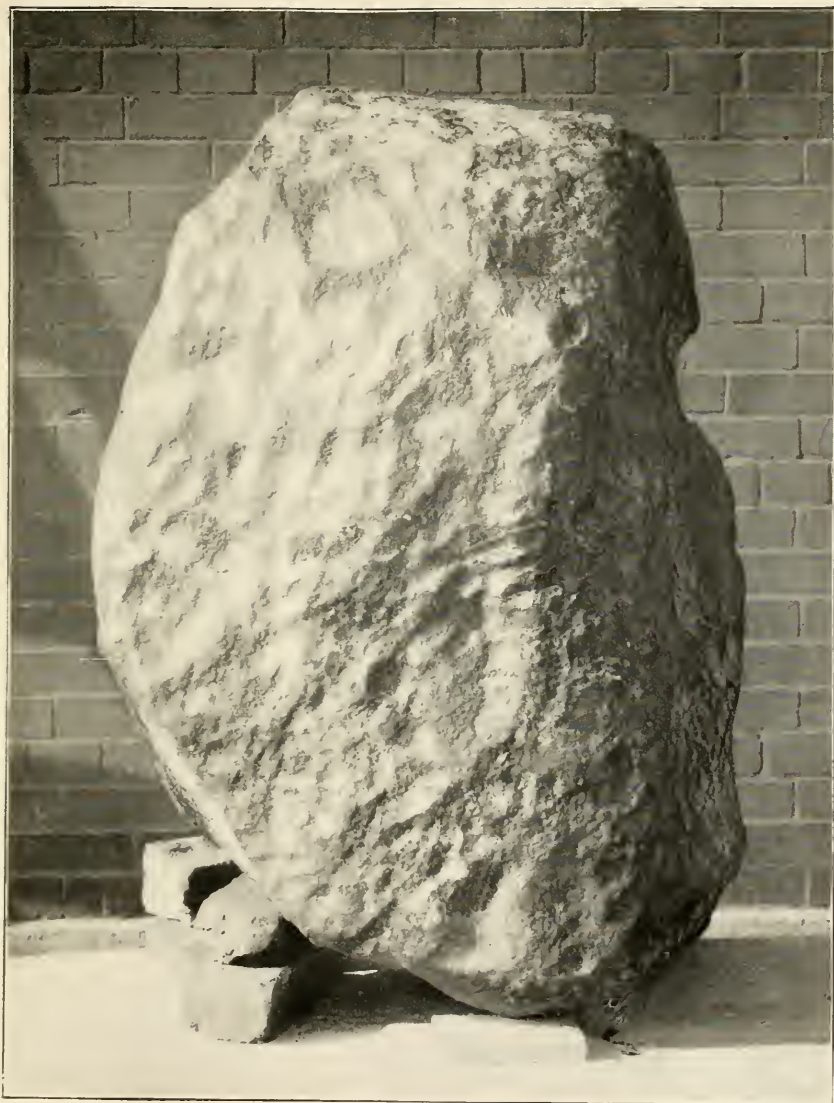
Fragment with crust and polished surface. Metallic grains present in large amount. Olivine chondrules 1 mm. in diameter. Weight, 7.83 grams. The Shepard Collection, No. 190.

Cabeza de Muyo, Murcia, Spain. Stone. Weight, 13.7 grams. Fell August 18, 1870. Fragment from interior. The Shepard Collection, No. 210.

Cabin Creek, Johnson County, Arkansas. Iron. Weight, 34 grams. Fell March 27, 1886. Irregularly shaped fragment showing octahedral cleavage. Catalogue number, 47183.

Cambria (Lockport), Niagara County, New York. Iron. Weight, 155 grams. Found 1818 (?). Slice polished and etched; shows Widmanstätten figures and troilite nodules. Catalogue number, 47361.

Etched slabs, containing large nodule of troilite. Etch figures coarse and approximately square. The Shepard Collection, No. 37.



THE CASAS GRANDES METEORIC IRON.

FOR DESCRIPTION SEE PAGE 679.

- Campo del Pucara*, Argentina. Stony iron. Weight, 0.192 gram. Found 1879. Fragment. The Shepard Collection, No. 112.
- Canyon Diablo*, Arizona. Iron. Weight, 1,890 pounds. Found 1891. (a) Cross section 37 by 41 by 2 cm. Etched. Shows numerous large troilite nodules; also graphitic nodules with hepatic markings of nickel iron. Widmanstätten figures coarse with numerous flakes of schreibersite. Weight, 8,955.54 grams; (b) complete individual; weight, 16,210.58 grams; (c) complete individual; weight, 32,080.98 grams; (d) complete individual; weight, 338,266 grams; (e) complete individual largely altered to limonite; (f) slice showing graphitic nodule containing veins of nickel iron; (g) complete individual; weight, 435,302 grams. The individuals have their surfaces indented with the characteristic pittings. Catalogue numbers, (a) 83442; (b) 83443; (c) 83444; (d) 83445; (e) 51109; (f) 83460; (g) 83774. (See Plate 1.)
- Cape Girardeau*, Missouri. Stone. Weight, 4 grams. Fell August 14, 1846. Fragment with crust. Ground mass ash gray flecked with rust spots and containing chondrules and metallic grains. Catalogue number, 47402.
- Cape iron*, Cape Colony, South Africa. Iron. Weight, 28.95 grams. Found 1793. Fragment. Catalogue number, 46069.
Weight, 182.5 grams. Section showing portion of original surface and containing troilite nodule. The Shepard Collection, No. 10.
- Carthage*, Smith County, Tennessee. Iron. Weight, 65 grams. Found 1840. Fragment. Catalogue number, 47338.
Weight, 43.1 grams. Section showing Widmanstätten figures; also delicate lines of tenite. The Shepard Collection, No. 36.
- Casas Grandes*, Chihuahua, Mexico. Iron. Weight, 1,317,920 grams. Complete individual. (See Plates 1 and 3.)
- Casey County*, Kentucky. Iron. Weight, 3.30 grams. Found 1877. Fragment. The Shepard Collection, No. 89.
- Castalia*, Nash County, North Carolina. Stone. Weight, 19.7 grams. Fell May 14, 1874, 2.30 p. m. Fragment with dull black papillated crust. Ground mass ash gray; granular and compact. Catalogue number, 47342.
- Castine*, Hancock County, Maine. Stone. Weight, fragment. Fell May 20, 1848. Fragment with crust. The Shepard Collection, No. 171.
- Cereseto*, near Otliglio, Alessandria, Piedmont, Italy. Stone. Weight, 65 grams. Fell July 17, 1840. Fragment with crust. Catalogue number, 84792.
- Chandakapur*, Berar, India. Stone. Weight, 3.9 grams. Fell June 6, 1838, 12 noon. Fragment with crust and polished surface. Ground mass stained with rust. Catalogue number, 45700.
Weight, 1.05 grams. Powder and angular fragments. The Shepard Collection, No. 159.
- Chantonmay*, Vendée, France. Stone. Weight, 12.1 grams. Fell August 5, 1812, 2 a. m. Fragment. Ground mass black, with metallic grains and gray chondrules. Catalogue number, 81168. Gift of R. de Kroustchoff.
Weight, 45.1 grams. Two fragments. The Shepard Collection, No. 141.
- Charcas*, San Luis Potosí, Mexico. Iron. Weight, 61 grams. Fragment containing nodule of troilite. Catalogue number, 48489.
- Charlotte*, Dickson County, Tennessee. Iron. Weight, 2.70 grams. Fell July or August, 1835. Triangularly shaped section. The Shepard Collection, No. 25.
- Charsonville*, near Orléans, Meung Sur Loire, Loiret, France. Stone. Weight, 54 grams. Fell November 23, 1810, 1.30 p. m. Fragment with crust. Crust pitted and somewhat oxidized. Ground mass granular and compact, ash gray, stained with rust, and traversed by delicate black veins. Metallic grains abundant. Catalogue number, 47969. (a) Fragment from interior; weight, 3.77 grams. (b) ["Bois de Fontaine"] fragments and powder from interior; weight, 3.27 grams. Catalogue numbers, (a) 138; (b) 150.

- Chateau-Renard*, Montargis, Triguères, Loiret, France. Stone. Weight, 3.74 grams. Fell June 12, 1841. Fragment from interior. Ground mass ash gray, compact, and containing numerous metallic grains. The Shepard Collection, No. 162.
- Chemnitz*, Hungary. Iron. Weight, 75.27 grams. Found 1853. Part of a mass, perhaps Bitburg. The iron has apparently been heated in a forge. The Shepard Collection, No. 107.
- Cherokee County* (not Losttown), Georgia. Iron. Weight, 189 grams. Found 1894. Slab, cross section of mass; etched, showing grains of troilite and Widmanstätten figures made up of broad plates 1 to 5 mm. wide. Catalogue number, 83495. Gift of Georgia Geological Survey.
- Chesterville*, Chester County, South Carolina. Iron. Weight, 91 grams. Found 1847. (a) Irregularly shaped section; weight, 36.4 grams; etched surface shows a network of fine lines. (b) Rectangular section; weight, 54.6 grams; etched surface as above. The Shepard Collection, Nos. (a) 42, (b) 43.
- Chile*. Weight, 4.76 grams. Fragment consisting entirely of nickel iron. The Shepard Collection, No. 74.
- Chulafinche*, Cleburne County, Alabama. Iron. Weight, 8.6 grams. Found 1873. Fragment. Catalogue number, 47322.
Weight, 54 grams. Thin slab, etched. Widmanstätten figures broad and well outlined. The Shepard Collection, No. 84.
- Claiborne* (Lime Creek), Clarke County, Alabama. Iron. Weight, 3.7 grams. Found 1834. Fragment. The Shepard Collection, No. 24.
- Clayton*, Vernon County, Wisconsin. Stone. Weight, 9.35 grams. Fell March 25, 1865. Slice polished; made up of coarse, transparent, nonmetallic grains, with scattering grains of nickel iron and chondrules, the whole resembling sandstone. The Shepard Collection, No. 198.
- Cleveland* (Lea Iron), east Tennessee. Iron. Weight, 260 grams. Found 1860. The Shepard Collection, No. 99.
Weight, 221 grams. A cross section of mass with polished and etched surfaces. Widmanstätten figures broad; contains nodule of troilite. Catalogue number, 46525.
- Coahuila* (Smithsonian iron), Mexico. Iron. Weight, 88.3 grams. Part of mass. Etched surface shows cubic structure. The Shepard Collection, No. 94.
- Cold Bokkeveld*, Cape Colony, South Africa. Stone. Weight (a), 4 grams; (b), 3 grams. Fell October 13, 1838, 9 a. m. (a) Two fragments, dull black with white specks. A carbonaceous meteorite containing a bituminous-like substance from which a wax-like carbon compound may be separated. (b) Fragment. Catalogue numbers (a), 8069, gift of J. Vorsfeld; (b) 81174, gift of R. de Kroustchoff.
Weight, 9.27 grams. Fragment of a dull black color, flecked with white. The Shepard Collection, No. 160.
- Cofax*, Rutherford County, North Carolina. Iron. Weight, 315 grams. Found 1880. Portion of mass, one face etched, showing Widmanstätten figures. Catalogue number, 48824. Gift of S. W. Cramer.
- Coopertown*, Robertson County, Tennessee. Iron. Weight, 633 grams. Cross section of mass 16 by 10 centimeters. One face etched. Widmanstätten figures distinct, made up of broad plates 2 to 8 millimeters wide. Catalogue number, 45746. Gift of D. Crockett through J. B. Lindsley.
Weight, 327.83 grams. Two slices etched, showing Widmanstätten figures made up of broad plates 5 to 7 millimeters in width. The Shepard Collection, No. 67.
- Cosby's Creek*, Cocke County, Tennessee. Iron. Weight, 7.24 grams. Fragment somewhat oxidized. Cleavage structure prominent. Catalogue number, 46624.
Weight, 69.16 grams. One lot of fragments, some of which show octahedral cleavage. The Shepard Collection, No. 32.

- Crab Orchard*, Crab Orchard Mountains, Powder Mill Creek, Rockwood, Tennessee. Stony iron. Weight, 77.9 grams. Found 1887. Two slabs, weight, 39.9 grams and 38 grams, with polished surfaces showing the metallic matrix containing siliceous grains of olivine, bronzite, etc. The metallic portion is about evenly distributed, except for two masses, one of which has a diameter of 1.8 centimeters; these have been etched and show well-marked Widmanstätten figures. Catalogue number, 47736. Gift of Ward and Howell.
- Cranberry Plains*, Poplar Hill, Virginia. Iron. Weight, 7.92 grams. Found 1852. Fragment. The Shepard Collection, No. 50.
- Craunbourae*, Victoria, Australia. Iron. Found 1854. One lot of fragments that have been heated in hydrogen; weight, 25.3 grams. Troilite nodule from mass; weight, 71.5 grams. (b) Yarra Yarra River; found 1858; weight, 15 grams. Catalogue numbers, 47329, 47330; (b) 47738.
- Fragment much oxidized and somewhat decomposed from occluded Lawrenceite; weight, 10.6 grams. (b) Yarra Yarra River; found 1858; weight, 21 grams. Oxidized fragment. The Shepard Collection, No. 59; (b) No. 59a.
- Cronstadt*, Orange River, Orange Free State, South Africa. Stone. Weight, 12.5 grams. Fell November 19, 1877. Fragment with crust and polished surface. Crust dull black, somewhat pitted and in swellings. Ground mass ash gray with abundant metallic grains. Chondrules gray and white. The Shepard Collection, No. 225.
- Cross Timbers*, Red River, Texas. Iron. Weight, 10.6 grams. Known 1808. Chiseled fragment. Catalogue number, 47336.
- Weight 63.7 grams. Two pieces, one 62.85 grams; the other a cleavage crystal, 0.85 gram. The Shepard Collection, No. 18.
- Cynthiana*, Harrison County, Kentucky. Stone. Weight, 1.77 grams. Fell January 23, 1877. Fragment with crust. The Shepard Collection, No. 223.
- Dalton*, Whitfield County, Georgia. Iron. Weight, 36.4 grams. Found 1877. Fragment of the mass described by Shepard. Etched, showing coarse Widmanstätten figures. Catalogue number, 44590.
- Weight, 735.71 grams. Two pieces—part of first mass found. Etched face shows broad Widmanstätten figures, with scattering plates of taenite. Surface more or less decomposed from presence of Lawrenceite. The Shepard Collection, No. 90.
- Daniels Knil*, Griqualand, South Africa. Stone. Weight, 4.6 grams. Fell March 20, 1868. Fragment from interior. Ground mass ash gray flecked with rust. The Shepard Collection, No. 204.
- Deal*, Monmouth County, New Jersey. Stone. Weight, 4.19 grams. Fell August 14, 1829. Fragment with crust. Ground mass ash gray, fine granular and compact, with delicate veins apparently filled with nickel iron somewhat oxidized. Structure chondritic with numerous metallic grains. The Shepard Collection, No. 157.
- Denton County* (near Austin), Texas. Iron. Weight, 7.97 grams. Found 1856. Etched fragment showing coarse Widmanstätten figures. The Shepard Collection, No. 63.
- Descubridora*, Catoroze, San Luis Potosi, Mexico. Iron. Weight, 24.8 grams. Known 1780. Oblong slab, etched. The Shepard Collection, No. 3.
- Dharmasala*, Kangra, India. Stone. Weight, 47.5 grams. Fell July 14, 1860, 2.30 p. m. Fragment from interior. Ground mass ash gray, granular and compact, and containing large and small chondrules and metallic grains. Distributed through the mass are large, fine, granular bluish-gray nodules. Catalogue number, 47323.
- Weight, 259.2 grams. Two fragments. (a) Fragment with crust. Crust faint, shining, and much pitted. Ground mass ash gray, compact, with finer grained bluish-gray nodules and oxidized metallic grains distributed through it. (b) Fragment from interior, one surface polished. Two faces show fragmentary slickensides. The Shepard Collection, No. 189.

- Djati-Pengilon*, Alastoewa, Ngawi, Java. Stone. Weight, 469 grams. Fell March 19, 1884. Fragment with dark-brown crust. Ground mass fine granular, compact, and containing numerous metallic grains with large and small chondrules. Color, dark brown. Catalogue number, 47731. Gift of the government of Netherlands India.
- Dona Inez*, Atacama, Chile. Stony iron. Weight, 59.5 grams. Found 1888. Portion of mass showing original and polished surfaces. The metallic and stony parts are about equal in amount, the latter being distributed through the mass in reticulated shapes. The specimen exhibits in a slight degree the characteristic cracked surface. The Shepard Collection, No. 117.
- Doronsk*, Daurien, Irkutsk, Siberia. Stone. Weight, 7.7 grams. Fell April 6, 1805. Fragment with crust. Ground mass dark ash gray, with small grayish white chondrules and metallic grains. Catalogue number, 81173. Gift of R. de Kroustehoff.
- Drake Creek* (near Nashville), Davidson County, Tennessee. Stone. Weight, 28 grams. Fell May 9, 1827. Fragment with dull black papillated crust. Ground mass granular, ash gray, and containing metallic grains and small white chondrules. Catalogue number, 47341.
Weight, 4.18 grams. Fragment with crust. The Shepard Collection, No. 154.
- Durango*, Mexico. Iron. Weight, 45.43 grams. Found 1804. Fragment etched with Widmanstättian figures. One surface deeply pitted. The Shepard Collection, No. 13.
- Duruma*, Mombas, Wanikaland, East Africa. Stone. Weight, 1.5 grams. Fell March 6, 1853. Fragment from interior. Ground mass ash-gray with gray chondrules and metallic grains, the latter occasionally coarse. Catalogue number, 84593. Gift of G. P. Merrill.
- Eagle Station*, Carroll County, Kentucky. Stony iron. Weight, 36 grams. Found 1880. Polished section showing sponge-like structure. The pores contain nodules of olivine and troilite. Catalogue number, 49074. Gift of George F. Kunz.
- Eichstadt*, Bavaria, Germany. Stone. Weight, 1 gram. Fell February 19, 1785. Fragment from interior. Ground mass coarse granular. The Shepard Collection, No. 127.
- Eisenberg*, Altenberg, Saxony, Germany. Iron. Weight, 9.7 grams. Found 1873. Fragment. The Shepard Collection, No. 85.
- Elbogen*, Bohemia, Austria. Iron. Weight, 4.45 grams. Found 1400. Fragment. The Shepard Collection, No. 1.
- El Capitan*, El Capitan Mountains, New Mexico. Iron. Found 1893. (a) Chiseled fragment showing cleavage structure. Etched, Widmanstättian figures, coarse. Weight, 67 grams. Gift of C. R. Biederman. (b) Polished cross section of mass 19.5 by 11 by 0.7 cm. Weight, 573 grams. Gift of E. E. Howell. Catalogue numbers, (a) 81153; (b) 83496.
- Emmitsburg*, Frederick County, Maryland. Iron. Weight, 5.5 grams. Found 1854. Etched fragment showing coarse Widmanstättian figures. The Shepard Collection, No. 56.
- Ensisheim*, Elsäss, Germany. Fragment. Weight, 3 grams. Fell November 16, 1492, 11.30 p. m. One surface with black striae resembling slickensides. Ground mass, granular compact, containing chondrules, nickel iron, and troilite. Catalogue number, 47740.
Weight, 4.3 grams. Two fragments from interior; one vial of powder, weight, 0.098 grams.
- Erath County*, Texas. Iron. Weight, 115 grams. Fragment etched. Catalogue number, 49053. Gift of Ward and Howell.
- Erxleben*, Saxon Prussia, Germany. Stone. Weight, 30.60 grams. Fell April 15, 1812, 4 p. m. Fragment with crust; also fragment from interior and vial of powder. The Shepard Collection, No. 140.



THE FELIX METEORITE.

FOR DESCRIPTION SEE PAGE 683.

Estherville, Emmet County, Iowa. Stony iron. Weight, (a) 292 grams; (b) 96 grams. Fell May 10, 1879, 5 p. m. (a) Stony fragment; weight, 145 grams. Fragment showing peckhamite, weight 82 grams. Nine masses, weight 65 grams, consisting chiefly of metal, and ranging in size from that of a pea to that of a walnut; their surfaces show rounded knobs, partly steel white and partly steel blue to black in color. (b) 31 small fragments. Catalogue numbers, (a) 20282, gift of C. P. Birge; (b) 46,072.

One hundred and nine complete individuals varying in size from that of a pea to that of a hen's egg; their surfaces show rounded knobs and are partly steel white and partly steel blue to black in color. A section shows the iron in spongiform masses, nodules, and irregular flakes distributed through the stony ground mass. The olivine nodules from above show a vitreous crust with marked lines of flow. Again they are coated with nickel iron. Two masses of chassignite. The Shepard Collection, No. 121.

Five masses composed chiefly of stone show deeply pitted crust. Ground mass containing large nodules of olivine, nickel, iron, and troilite. The Shepard Collection, No. 121.

Farmington, Washington County, Kansas. Stone. Weight, 489 grams. Fell June 25, 1890, 1 p. m. Mass having the appearance of a dark-gray dolerite. Crust smooth, showing scales or blisters in spots. Ground mass containing black chondrules; also white radiated chondrules and bronze-yellow metallic grains. The Shepard Collection, No. 242.

Fayette County, Texas. Stone. Weight, 247 grams. Found 1878. Two fragments. One, weight 137 grams, with a polished surface containing a black vein; another, weight 110 grams. Both show crust, somewhat decomposed, but with characteristic pittings. Ground mass fine grained, compact; greenish brown. Catalogue number, 47912. Gift of Ward and Howell.

Felix, Perry County, Alabama. Stone. Weight, 1,881.77 grams. Fell May, 1900. Complete individual. Crust surface dull black in blebs and swellings and indented with broad shallow pits. Ground mass dark ash-gray, fine grained, and containing numerous small chondrules which vary but little in color from the ground mass. No metallic veins are visible to the unaided eye. Catalogue number, 84744. (See Plate 4.)

Fisher, Polk County, Minnesota. Stone. Weight, 1,311.164 grams. Fell April 9, 1894. Complete individual of an irregular shape; surface completely covered with a dull black, somewhat papillated, and much pitted crust. Catalogue number, 84375.

Floyd Mountain, Indian Valley Township, Pulaski County, Virginia. Iron. Weight 8 grams, Found 1887. Drillings. Catalogue number, 51849.

Forest City, Leland, Winnebago County, Iowa. Stone. Weight, 127 grams. Fell May 2, 1890, 5.15 p. m. (a) Catalogue number, 49095. Gift of George F. Kunz. (b) Catalogue number, 49097. Gift of J. P. Dolliver. Fragment with crust. Surface indented with broad, shallow, and conical pittings. Ground mass ash gray with coarse and fine metallic grains and containing chondrules. (c) Catalogue number, 51986. Complete individual covered with thick dull-black crust and surface indented with broad, shallow, and conical pittings; also fragment showing interior.

Forsyth, Monroe County, Georgia. Stone. Weight, 9.50 grams. Fell May 8, 1829, 3.30 p. m. Two fragments; one with crust and one from interior. The Shepard Collection, No. 156.

Fort Duncan, Maverick County, Texas. Iron. Weight, 116 grams. Found 1882. Slab, one surface etched. Etching develops Neumann lines as a network on a granular or stippled ground; small grains of troilite are seen. The Shepard Collection, No. 96.

- Frankfort*, Franklin County, Alabama. Stone. Weight, 47 grams. Fell December 5, 1868. Fragment with shining black papillated crust having well-marked lines of flow. The Shepard Collection, No. 205.
- Fukutomi*, Kinejima, Hizen, Japan. Stone. Weight, 9.7 grams. Fell March 19, 1882. Fragment with black papillated crust. Ground mass dark ash gray with numerous light and dark chondrules and some metallic grains. Catalogue number, 47659. Gift of the Educational Museum at Tokio.
- Futtepore*, Allahabad, Doab, India. Stone. Weight, 2.22 grams. Fell November 30, 1822. Fragment with crust and polished surface. The Shepard Collection, No. 148.
- Gargantillo*, Jalisco, Mexico. Stone. Weight, 4.14 grams. Fell August or September 17, 1879. Fragment from interior. Ground mass coarse granular. Catalogue number, 46074.
Weight, 511 grams. Mass with crust showing lines of flow and pittings. Fragment from interior; one lot of fragments and powder. The Shepard Collection, No. 229.
- Girgenti*, Sicily. Stone. Weight, 1.5 grams. Fell February 10, 1853, 1 p. m. Fragment from interior. Ground mass ash gray, fine granular. One surface shows a metallic slickenside. The Shepard Collection, No. 177.
- Glorietta*, Glorietta Mountains, Santa Fe County, New Mexico. Iron. Weight, 853.40 grams. Found 1884. Section. Etched surface shows poor Widmanstätten figures, with one large nodule of troilite and several small ones. The Shepard Collection, No. 98.
Weight, 380 grams. Polished slab, 13.3 by 6.6 by 1 cm. Catalogue number, 46509.
- Grand Rapids* (Walker Township), Michigan. Iron. Weight, 47,650 grams. Found 1883. Slab, 16 by 11 by 2.5. One surface polished and etched. Widmanstätten figures distinct, the bands made up of thin plates in parallel bundles. (b) A cast of original mass. Catalogue number, 45939. Gift of G. C. Pulcher.
Weight, 34.5 grams. The Shepard Collection, No. 97.
- Greenbrier County* (3 miles north of White Sulphur Springs), West Virginia. Iron. Weight, 11 grams. Found 1880. Contains crystals of chromite. Catalogue number, 47735.
- Greenland* (not Ovfak.) Iron. Weight, 15.65 grams. Found before 1860. Fragment etched. Widmanstätten figures fair. Catalogue number, 45698.
- Grosnojaja* (Mikenskoi), River Terek, Caucasus, Russia. Stone. Weight, 4.5 grams. Fell June 28, 1861. Fragment with crust. Crust differs but little in color from the black, compact, fine granular chondritic ground mass. Metallic grains few. Catalogue number, 47969.
- Grossliebenthal*, near Odessa, Cherson, Russia. Stone. Weight, 8 grams. Fell November 19, 1881. Fragment from interior. Ground mass ash gray, containing white chondrules and metallic grains. A thin vein, composed apparently of nickel iron more or less oxidized, passes through the specimen. The Shepard Collection, No. 233.
- Hainholz*, Minden, Westphalia, Germany. Stony iron. Weight, 7 grams. Found 1856. Fragment, one surface polished, showing metallic grains scattered through a black fine-grained ground mass of bronzite and asmanite. Other surfaces stained with rust. Catalogue number, 47697.
Weight, 12.15 grams. Fragment with polished surface. Metallic grains small and scattered through a mass of bronzite in which are relatively large grains of olivine with some asmanite and troilite. The Shepard Collection, No. 114.

Harrison County, Indiana. Stone. Weight, 10 grams. Fell March 28, 1859. Fragment with crust. Ground mass light ash gray with howardite chondrules and few, if any, metallic grains. Catalogue number, 46523. Gift of J. Berrien Lindsley.

Weight, 36.4 grams. Fragment with crust and polished surface. The Shepard Collection, No. 187.

Hartford, Linn County, Iowa. Stone. Weight, 1,602.35 grams. Fell February 25, 1847, 2.45 p. m. Mass with thick dull black crust, pitted and marked with swells and furrows as a result of flow. Interior ash gray, one surface marked with a metallic slickensides, much oxidized. The mass is traversed by metallic veins or lines of fracture which mark slipping zones with slickensided surfaces. The Shepard Collection, No. 170.

Weight, 23.7 grams, B. Fell February 25, 1847, 2.45 p. m. Fragment with dull black crust. (b) Fragment with dull black blebby crust. Catalogue numbers, 47746; (b) 81348.

Henry County, Virginia. Iron. Weight, 30.25 grams. Found 1889. Oxidized fragment showing cleavage. Catalogue number, 49172. Gift of H. B. Battle.

Hessle (near Upsala), Mälars See, Sweden. Stone. Weight, 11.2 grams. Fell January 1, 1869, 12.30 p. m. Complete individual with dull black, papillated crust. Catalogue number, 45699.

Weight, 259.8 grams. Four fragments with thin, dull black, papillated crust. The Shepard Collection, No. 206.

Hex River Mountains, Cape Colony, South Africa. Iron. Weight, 14.3 grams. Found 1882. Section. Etched surface shows Neumann's lines. The Shepard Collection, No. 95.

Holland's Store, Chattooga County, Georgia. Iron. Found 1887. Clipping. Catalogue number, 47744. Gift of George F. Kunz.

Homestead (West Liberty), Iowa County, Iowa. Stone. Weight, 79 grams; (b) 322 grams. Fell February 12, 1875, 10.15 p. m. Fragment with thin, dull black crust. Ground mass dark ash gray, granular, and compact. (b) Complete individual covered with dull black and somewhat blebby crust. Surface indented with shallow pits. Catalogue number, 19361. Gift of J. R. Eastman. (b) 45275.

Weight, 3,185 grams. Four complete individuals covered with crust and indented with broad, shallow pits. Crust dull black, thin, and somewhat blebby. Three fragments showing interior having an abundance of metallic grains and a chondritic structure. The Shepard Collection, No. 219.

Honolulu, Oahu, Hawaiian Islands. Stone. Weight, 1.35 grams. Fell September 27, 1825. Fragment with crust. The Shepard Collection, No. 152.

Hrascina, Agram, Croatia, Austria. Iron. Weight, 0.737 gram. Fell May 26, 1751. Etched fragment showing Widmanstätten figures. The Shepard Collection, No. 2.

Imilac, Atacama, Chile. Stony iron. Weight, 25.75 grams. Found 1827. Fragment; the metallic matrix as well as the olivine have undergone decomposition. Vial of fragments of matrix with little or no olivine. Vial of fragments of iron and olivine but little altered. The Shepard Collection, No. 111.

Weight, 197 grams. Found about 1800. Three specimens of the spongiform metallic matrix, somewhat oxidized and containing but little of the stony portion. Catalogue number, 12116.

Inca (Llano del Inca), 35 leagues southeast of Toltal, Atacama, Chile. Stony iron. Weight, 66 grams. Found 1888. Section of iron matrix containing siliceous grains of olivine, bronzite, augite, etc. Catalogue number, 49076. Gift of Ward and Howell.

- Indarka*, Schuscha, Elisabethopol, Caucasia, Russia. Stone. Weight, 1.4 grams. Fell April 7, 1891. Fragment from interior. Ground mass black with scattering black chondrules. Catalogue number, 84698.
- Iridell*, Bosque County, Texas. Iron. Weight, 98 grams. Found 1898. Rough fragment, with small etched surface showing granular structure and fine Neumann lines. Catalogue number, 84824.
- Itapicuru-mirim*, Maranhão, Brazil. Stone. Weight, 9.7 grams. Fell March, 1879. Fragment with dull black crust. Ground mass ash gray, fine granular, and compact. Catalogue number, 47648.
- Ivanpah*, San Bernardino County, California. Iron. Weight, 70 grams. Found 1880. One lot turnings. Catalogue number, 46629. Gift California State Mining Bureau.
Weight, 11.75 grams. Section etched showing Widmanstätten figures. The Shepard Collection, No. 92.
- Jamestown*, Stutsman County, North Dakota. Iron. Weight, 74.15 grams. Found 1885. Cross section of mass with polished surface. The Shepard Collection, No. 101.
- Jefferson*, 30 miles from Denver, Colorado. Iron. Weight, 41 grams. Fell June, 1867. Fragment containing troilite nodule; somewhat decomposed from occluded chlorides. The Shepard Collection, No. 81.
- Jenny's Creek*, Wayne County, West Virginia. Iron. Weight, 25 grams. Found 1883. Fragments showing cleavage octahedrons. Catalogue number, 46361. Gift of G. M. Crabtree.
- Jerome* (Smoky Hill River), Gove County, Kansas. Stone. Weight, (a) 101 grams; (b) 9 grams. Found April 10, 1894. Section of mass, one surface polished. Ground mass fine granular compact containing numerous small grains of nickel, iron, and many chondrules of bronzite and olivine, with fragmental crystals of olivine, bronzite, and some pyroxene, also some plagioclase fragments. No troilite present. Crust and ground mass rust-brown from oxidation. (b) Slice. Catalogue number, 845 7.
- Jewell Hill*, Madison County, North Carolina. Iron. Weight, 0.91 gram. Found 1854. Thin section etched. Catalogue number, 46519. Gift of J. Berrien Lindsley.
Weight, 31.85 grams. Rectangular section showing portion of surface. Etched face showing Widmanstätten figures. Taenite plates well developed. The Shepard Collection, No. 54.
- Jhung*, Punjab, India. Stone. Weight, 1.22 grams. Fell June, 1873. Four fragments. Catalogue number, 46626.
- Jigalouka*, Charkow, Russia. Stone. Weight, 26.2 gram. Fell October 13, 1787. Fragment from interior. Ground mass ash gray, fine granular. Catalogue number, 81164. Gift of R. de Kroustchoff.
- Joe Wright Mountain*, near Batesville, Independence County, Arkansas. Iron. Weight, 309 grams. Found 1884. Catalogue number, 47970. Weight, 20 grams. Section showing typical Widmanstätten figures. The markings are broad and regular, with large plates of troilite. The Shepard Collection, No. 100.
- Jonzac*, Charente inférieure, France. Stone. Weight, 0.17 gram. Fell June 13, 1819. Fragment. The Shepard Collection, No. 143.
- Jurinas*, Ardèche, Languedoc, France. Stone. Weight, 2 grams. Fell June 15, 1821, 3.30 p. m. Fragment with shiny black, somewhat blebby crust. Ground mass coarse, granular, containing augite, anorthite, and small amount of troilite. Catalogue number, 46073.
Weight, 39.5 grams. Fragment from interior. The Shepard Collection, No. 146.
- Kaba*, near Debreczin, Hungary. Stone. Weight, 6.20 grams. Fell April 15, 1857. Fine powder. The Shepard Collection, No. 182.

- Karakol*, Kirghis Steppes, Russia. Stone. Weight, 4.2 grams. Fell May 9, 1840. Fragment with crust. Ground mass ash gray, fine granular. Catalogue number, 81167. Gift of R. de Kroustchoff.
- Kendall County*, Texas. Iron. Weight, 767 grams. End section of mass with crust and etched surfaces. Etched face exhibits a brecciated appearance and contains schreibersite and troilite, the latter more or less oxidized. Catalogue number, 84810.
- Kenton County*, Kentucky. Iron. Weight, 146 grams. Found 1889. Slab 4 by 4.2 by 1 cm. Etched surface shows faint Widmanstätten figures and scattering grains of troilite. Catalogue number, 83467.
- Kerilis*, Côtes du Nord, France. Stone. Weight, 2.70 grams. Fell November 26, 1874. Fragment with crust. The Shepard Collection, No. 218.
- Kernouré*, Morbihan, Bretagne, France. Stone. Weight, 52.65 grams. Fell May 22, 1869, 10 p. m. Fragment from interior. The Shepard Collection, No. 207.
- Kesen*, Iwate, Japan. Stone. Weight, 218 grams. Fell June 13, 1850. Mass with dull, black crust. Surface blebby and indented with broad shallow pits. One surface polished, ground mass ash gray, granular compact, and traversed by several black veins and checks. Catalogue number, 83461.
- Khairpur*, Bhawalpur, Mooltan, India. Stone. Weight, 26.75 grams. Fell September 23, 1873. Fragment with polished surface and crust. Crust dull black, blebby, and showing lines of flow. Ground mass dark gray, compact. The Shepard Collection, No. 217.
- Knyahinya*, near Nagy Berezna, Hungary. Stone. Weight, 32.83 grams. Fell June 9, 1866, 5 p. m. Complete individual covered with thin black crust and having a pitted surface. Fragment with crust and polished surface. The Shepard Collection, No. 200.
Fragment with crust. Crust surface indented with broad, shallow, and conical pits. Another surface polished. Ground mass ash gray, granular, and compact. Weight, 27.8 grams. Catalogue number, 47343.
- Krasnojarsk*, Jeniseisk, Siberia. Pallasite. Weight, 327 grams. Found 1749. Section. The spongiform metallic matrix incloses nodules of olivine of varying diameters, more or less transparent and vitreous, and varying in color from honey yellow to nearly black. Also fragments of matrix from which the olivine has disappeared. The Shepard Collection, No. 110.
Weight, 6.8 grams. Fragment of iron matrix containing some olivine. Catalogue number, 45696.
- Krasnoj-Ugol*, Râsan, Russia. Stone. Weight, 5.8 grams. Fell September 9, 1829. Fragment from interior. Ground mass ash gray, granular and compact. Catalogue number, 81176. Gift of R. de Kroustchoff.
- Kuleschowka*, Poltawa, Russia. Stone. Weight, 5.95 grams. Fell March 12 (midnight), 1811. Fragment with crust. The Shepard Collection, No. 139.
Weight, 5.4 grams. Two fragments each weighing 2.7 grams. One with crust, other from interior. Ground mass ash-gray, fine granular. Catalogue number, 81165. Gift of R. de Kroustchoff.
- L'Aigle*, Normandie, Orne, France. Stone. Weight, 11.35 grams. Fell April 26, 1803, 1 p. m. Fragment with crust. The Shepard Collection, No. 132.
Weight, 56 grams. Fragment with brownish black crust. Crust surface pitted and stained with iron oxide. Ground mass ash-gray, stained with rust; granular, compact. Catalogue number, 46512.
- La Bécasse*, Indre, France. Stone. Weight, 5 grams. Fell January 31, 1879. Fragment with crust. The Shepard Collection, No. 228.
- La Caille*, near Grasse, Var, France. Iron. Weight, 1.48 grams. Found 1600. Fragment. The Shepard Collection, No. 4.

La Grange, Oldham County, Kentucky. Iron. Weight, 223 grams. Found 1860. Fragment 4 by 4.5 by 1.5 cm. Catalogue number, 46520. Gift of J. Berrien Lindsley.

Weight, 2,002 grams. (a) Section marked "Oldham," weight, 1,019 grams. Widmanstätten figures slightly indicated. (b) Section, weight, 983 grams, with well-marked Widmanstätten figures. The Shepard Collection, No. 69.

Lancé, Loir et Cher, France. Stone. Weight, 9 grams. Fell July 23, 1872. Weight, 7 grams. Fragment from interior. Catalogue number, 84773. Fragment with dull-black blebby crust. Ground mass dark gray, fine grained, compact. The Shepard Collection, No. 215.

Leuwarto, Scharosch, Hungary. Iron. Weight, 17.52 grams. Found 1814. Two fragments. One polished, weight, 1 gram. One, weight, 16.52 grams, etched on both sides, showing Widmanstätten figures. The Shepard Collection, No. 17.

Les Ormes, Yonne, France. Stone. Weight, 0.70 gram. Fell October 1, 1857. Fragments from interior. The Shepard Collection, No. 183.

Lexington County, South Carolina. Iron. Weight, 65 grams. Found 1880. Fragment showing octahedral structure. Catalogue number, 18876.

Weight, 3,992 grams. Part of mass containing large troilite nodule. The Shepard Collection, No. 93.

Lick Creek, Davidson County, North Carolina. Iron. Weight, 9.72 grams. Found 1879. Fragment. The Shepard Collection, No. 91.

Lime Creek, Walker County, Alabama. Iron. Weight, 14 grams. Found 1832. Fragment. Catalogue number, 47737.

Limerick, Adare, Ireland. Stone. Weight, 24 grams. Fell September 10, 1813. Fragment from interior. Catalogue number, 84793.

Lion River, Great Namaqualand, South Africa. Iron. Weight, 34.87 grams. Catalogue number, 46604.

Weight, 20.85 grams. Section showing original surface. Etched portion shows fine Widmanstätten figures. The plates narrow and distinct. The Shepard Collection, No. 51.

Lissa, Bunzlau, Bohemia, Austria. Stone. Weight, 47 grams. Fell September 3, 1808. Fragment showing somewhat blebby crust. Crust surface indented with a broad, shallow pit. Interior light ash-gray, somewhat flecked with rust and traversed by darker veins and containing chondrules and bright metallic veins. Catalogue number, 84717.

Little Piney, Jefferson City, Pulaski County, Missouri. Stone. Weight, 75.44 grams. Fell February 13, 1839. Fragment from interior. The Shepard Collection, No. 161.

Lixna, Dünaburg, Witebsk, Russia. Stone. Weight, 1.19 grams. Fell July 12, 1820. Fragment with crust. The Shepard Collection, No. 145.

Long Creek, Jefferson County, Tennessee. Iron. Weight, 571 grams. Found 1853. Of doubtful origin. An irregularly shaped mass having its surface more or less indented and somewhat oxidized. One part polished and etched, showing peculiar markings which are neither Widmanstätten figures nor Newmann lines. Fractured surfaces show a tendency toward crystallization. Catalogue number, 46879.

Long Island, Phillips County, Kansas. Stone. Weight, 1,893 grams. Found 1891. Three masses: (a) Weight 493 grams, having a slickensided surface, which later was fused to a smooth crust. (b) Weight, 159 grams, and (c) 1,241 grams. All have their surfaces much oxidized, and in places coated with a grayish incrustation of carbonate of calcium. Ground mass compact and fine granular; brownish-black. Catalogue number, 83845. Gift of F. W. Clarke.

Losttoun, Cherokee County, Georgia. Iron. Weight, 6.65 grams. Found 1867. Oxidized fragment. Catalogue number, 46065.

Weight, 75.4 grams. Found 1864. Section, one surface etched showing Widmanstätten figures. Three vials of powder. The Shepard Collection, No. 77.

- Lucignano d'Asso*, Siena, Tuscany, Italy. Stone. Weight, 3.7 grams. Fell June 16, 1794. Fragments. The Shepard Collection, No. 243.
- Lumpkin*, Stewart County, Georgia. Stone. Weight, 1.62 grams. Fell October 6, 1869, 11.43 a. m. Fragment with crust and polished surfaces. The Shepard Collection, No. 209.
- McKinney*, Collin County, Texas. Stone. Weight, 1,180 grams. Fell 1870. Mass with reddish brown, much oxidized crust. Ground mass greenish black, fine granular, compact. Catalogue number, 82751.
- Mucão*, Rio Grande do Norte, Brazil. Stone. Weight, 68.5 grams. Fell November 11, 1836. Fragment with crust deeply stained with iron oxide. Ground mass compact and fine granular. Catalogue number 47904.
- Madoc*, Hastings, Ontario, Canada. Iron. Weight, 19.65 grams. Found 1854. Section showing coarse Widmanstätten figures. The Shepard Collection, No. 57.
- Maéme*, Hisugari, Satsuma, Japan. Stone. Weight, 29.2 grams. Fell November 10, 1886. Fragment with crust. Crust somewhat pitted and in blebs. Ground mass light ash gray, granular, compact. Catalogue number, 47658. Gift of Educational Museum at Tokio, Japan.
- Magdalena*, Socorro County, New Mexico. Iron. Weight, 22 grams. Found 1899. Slice, 5 by 2 cm. Etched, showing coarse figures made up of broad plates. Catalogue number, 84596.
- Magura* (Arva), Szlanicza, Hungary. Iron. Weight, 98 grams. Found 1840. Slice, etched, showing delicate Widmanstätten figures. Catalogue number, 45667. Weight, 123.50 grams. Two vials and one fragment. The Shepard Collection, No. 35.
- Mambloom*, Bengal, India. Stone. Weight, 2 grams. Fell December 22, 1863. Fragment. Catalogue number, 48490.
- Marshall County*, Kentucky. Iron. Weight, 68.23 grams. Two fragments. The Shepard Collection, No. 62.
- Mart*, McClellan County, Texas. Iron. Weight, 456 grams. Found 1898. Slice, etched, etching develops typical Widmanstätten figures showing plates of taenite in parallel bundles; small nodules of troilite are scattered over the surface, together with several veins of the same mineral. Cast of original mass. Catalogue number, 84600.
- Maryland*. Weight, 2.735 grams. A shaving from burned museum in Baltimore. The Shepard Collection, No. 15.
- Mauerkirchen*, Austria. Stone. Weight, 0.5 gram. Fell November 20, 1768, 4 p. m. Fragment from interior. The Shepard Collection, No. 125.
- Ménon*, Mecklenburg, Germany. Stone. Weight, 2.1 grams. Fell October 7, 1862, 1.30 p. m. Fragment from interior. The Shepard Collection, No. 191.
- Mező-Madaras*, Transylvania, Hungary. Stone. Weight, 86.8 grams. Fell September 4, 1852, 4.30 p. m. Nearly complete individual with crust. The Shepard Collection, No. 175.
- Mighi*, Trans Caucasus, Russia. Stone. Weight, 10 grams. Fell June 18, 1889. Fragment, dull black and soft friable, soiling the fingers. A carbonaceous meteorite. The Shepard Collection, No. 241.
- Milena* (Pusinsko Selo), Warasdin, Croatia, Austria. Stone. Weight, 46.25 grams. Fell April 26, 1842, 3 p. m. Fragment from interior, one surface appreciably slickensided. The Shepard Collection, No. 164.
- Minas Geraes*, Brazil. Stone. Weight, 10.9 grams. Fragment with crust. Catalogue number, 47647.
- Miney*, Taney County, Missouri. Stony iron. Weight, (a) 34 grams; (b) 108 grams. Found 1856. (a) Fragment; (b) slice with polished surface showing the reticulated metallic portion holding the siliceous material, consisting of olivine, bronzite, augite, and plagioclase. Catalogue numbers, (a) 47745. (b) 83468. Gift of George F. Kunz.

- Misshof*, Courland, Russia. Stone. Weight, 45 grams. Fell April 10, 1890. Section of mass with crust. Ground mass ash gray, flecked with rust, and containing numerous metallic grains and chondrules. Catalogue number, 84761.
Weight, 109 grams. Fragment with crust. Catalogue number, 84794.
- Misteca*, Oaxaca, Mexico. Iron. Weight, 18.5 grams. Found 1804. Two fragments; one, weight 2.5 grams, polished; other, weight 16 grams, etched, developing Widmanstätten figures. The Shepard Collection, No. 12.
- Mocs*, Transylvania, Hungary. Stone. Weight, 95 grams. Fell February 3, 1882, 4 p. m. Two nearly complete individuals. Crust brownish black, somewhat pitted, and showing lines of flow. Catalogue number, 44478.
Weight, 17.85 grams. Fragment with crust, one surface polished. The Shepard Collection, No. 234.
- Molina*, Murcia, Spain. Stone. Weight, 3.67 grams. Fell December 24, 1858. Fragment with crust, one surface apparently slickensided. The Shepard Collection, No. 186.
- Monroe*, Cabarrus County, North Carolina. Stone. Weight, 343.6 grams. Fell October 31, 1849, 3 p. m. Fragment with crust; another with two surfaces polished. The Shepard Collection, No. 173.
- Monte Miloue* (Macerata), Italy. Stone. Weight, 0.73 gram. Fell May 8, 1846. Fragment with crust. The Shepard Collection, No. 169.
- Mooresfort*, Tipperary, Ireland. Stone. Weight, 1 gram. Fell August, 1810. Fragment with dull black crust. The Shepard Collection, No. 137.
- Mordvinorka*, Pavlograd, Ekaterinoslav, Russia. Stone. Weight, 18 grams; (b) 5.25 grams. Fell May 19, 1826. Polished slice. (b) Fragment from interior. Catalogue numbers, 47742; (b) 47734.
Weight, 3.11 grams. Three fragments, one with crust. The Shepard Collection, No. 153.
- Morristown*, Hamblen County, Tennessee. Stone. Weight, 1,820 grams. Found 1887.
- Motecka-nugla*, Bhurtpur, Rajputana, India. Stone. Weight, 3 grams. Fell December 26, 1868. Fragment. Catalogue number, 47333.
- Motta di Conti*, Piedmont, Italy. Stone. Weight, 1.53 grams. Fell February 29, 1868. Fragment with papillated shiny black crust. The Shepard Collection, No. 202.
- Mount Joy*, Adams County, Pennsylvania. Iron. Weight, 2,161 grams. Found 1887. Fragments, originally a section, weight, 2,026.99 grams, and containing numerous cracks or veins filled with carbonaceous matter and chlorides; also containing numerous troilite nodules. The decomposition due to the occluded chlorides. Catalogue number, 84377. Gift of E. E. Howell. Fragment. Weight, 135 grams. Catalogue number, 51110.
- Mount Osceola*, Socorro County, New Mexico. Iron. Weight, 243.7 grams. Found December 10, 1895. (a) Fragment showing portion of original surface with indications of octahedral cleavage; weight, 103.5 grams. (b) Fragment with original and etched surface. Widmanstätten figures poor; weight, 140.2 grams. Catalogue number, 84378.
- Murfreesboro*, near Nashville, Rutherford County, Tennessee. Iron. Weight, 57.5 grams. Oblong slab, 3.2 by 2 by 0.6 cm. Catalogue number, 47340.
Fragment. Weight, 5.88 grams. The Shepard Collection, No. 41.
- Nagaya*, near Concepcion, Entre Rios, Argentina. Stone. Weight, 3.5 grams. Fell July 1, 1879. Fragment, black in color with scattering gray specks. A carbonaceous stone. Catalogue number, 48431.
- Nanjimoy*, Charles County, Maryland. Stone. Weight, 31.22 grams. Fell February 10, 1825, 12 p. m. Fragment with crust. The Shepard collection, No 151.

Nejed, Wadec Bancee Khaled, Central Arabia. Iron. Weight, 309 grams. Fell spring of 1865. Sawn section etched. Widmanstättian figures typical. Catalogue number, 84786. Weight, 37 grams. Sawn section. The Shepard Collection, No. 73.

Nelson County, Kentucky. Iron. Weight, 370 grams. Found 1860. Section 5 by 6 by 2 centimeters. Shows portion of original surface and contains fine grains of troilite. Catalogue number, 46521. Gift of J. Berrien Lindsley.

Weight, 58.3 grams. Section of mass. The Shepard Collection, No. 68.

Neudammendorf, near Pirna, Saxony, Germany. Iron. Weight, 15.15 grams. Found 1872. Fragment, weight, 2.45 grams. Fragment (weight, 12.70 grams) showing a greenish efflorescence of nickel compounds. The Shepard Collection, No. 83.

Ness County, Kansas. Stone. Weight, 108 grams. Found spring of 1899. Nearly complete individual; one face polished showing ground mass deeply stained with rust and containing numerous large and small gray chondrules, with small metallic grains. Crust surface brown from oxidation. Catalogue number, 84707.

Weight, 206 grams. Catalogue number, 84803. Weight, 903 grams. Two complete individuals weighing 833 and 70 grams respectively. Catalogue number, 84814. Weight, 469 grams. Five specimens weighing 191, 138, 63, 48, and 29 grams, respectively. Catalogue number, 84815.

Netschaero, Tula, Russia. Iron. Weight, 61.95 grams. Found 1846. Fragment. The Shepard Collection, No. 38.

New Concord, *Guersey*, and *Muskingum Counties*, Ohio. Stone. Weight, 3,311.87 grams. Fell May 1, 1860, 12.45 p. m. Nearly complete individual covered with a somewhat pitted black crust. The Shepard Collection, No. 188.

Weight, (a) 197 grams; (b) 1,720 grams. Fell May 1, 1860, 12.45 p. m. (a) Complete individual with crust; one surface striated resembling slickenside. (b) Mass, black, papillated and somewhat pitted crust. Ground mass dark ash gray, fine granular compact. Catalogue numbers, (a) 8065, gift of E. B. Andrews; (b) 46610, gift of J. B. Lindsley.

Newstead, Roxburghshire, Scotland. Iron. Weight, 51 grams. Found 1827. Triangularly shaped fragments. The Shepard Collection, No. 22.

Nowo-Urei, Krasnoslobodsk, Pensa, Russia. Stone. Weight, 4 grams. Fell September 22, 1886. Fragment from interior. Ground mass black (ureilite); coarse granular. The Shepard Collection, No. 240.

Oakley, Logan County, Kansas. Stone. Weight, 320 grams. Found 1895. Sawn section. The dark gray, nearly black ground mass contains numerous metallic grains and chondrules. Catalogue number, 84788.

Oberkirchen, Oldenburg, Schaumberg-Lippe, Germany. Iron. Weight, 152.5 grams. Found 1863. Catalogue number, 47328.

Weight, 53.4 grams. (a) Section showing troilite nodule. Weight, 30.3 grams. (b) Section weighing 23.1 grams. The Shepard Collection, No. 71.

Ochansk (Taborg), Perm, Russia. Stone. Weight, 161 grams; (b) 13.3 grams. Fell August 30, 1887. Fragment from interior. (b) Two fragments; one, weight 10 grams, without crust, and one, weight 3.3 grams, with a trace of crust. Catalogue numbers, 47733; (b) 81169. Gift of R. de Kroustchoff.

Oktibbeha, Mississippi. Iron. Weight, 1.89 grams. Found 1854. The Shepard Collection, No. 55.

Orange River, South Africa. Iron. Weight, 99.4 grams. Fragment. Catalogue number, 47320.

Weight, 21.41 grams. Etched section with original surface. Widmanstättian figures coarse; taenite plates narrow. The Shepard Collection, No. 64.

Orgueil, Montauban, Tarn et Garonne, France. Stone. Weight, 9.62 grams.

Weight, 98 grams. Fell May 14, 1864, 8 p. m. Fragment with crust. Crust surface much crackled and deeply pitted. Catalogue number, 8473.

Coarse, black friable powder. The Shepard Collection, No. 196.

- Ornans*, Salins, Doubs, France. Stone. Weight, 6 grams. Fell July 11, 1868. Fragment from interior. Ground mass dark ash gray. Chondrules made up of ornansite and Ngawite. The Shepard Collection, No. 203.
- Orcinio*, Umbria, Italy. Stone. Weight, 0.12 gram. Fell August 31, 1872. Fragment with crust. Ground mass dull black and flecked with numerous white efflorescences. The stone contains no iron. Catalogue number, 84743. The Shepard Collection, No. 216.
- Ösel* (Kaande), Poland, Russia. Stone. Weight, 13 grams. Fell May 11, 1855, 3.30 p. m. Fragment with crust. Ground mass ash gray; fine granular compact. Catalogue number, 81170. Gift of R. de Kroustehoff. Weight, 4 grams. Fragment from interior. The Shepard Collection, No. 178.
- Pacula*, Jacal, Hidalgo, Mexico. Stone. Weight, 23 grams. Fell June 18, 1881. Fragment from interior. Catalogue number, 84787. Two fragments from interior. Ground mass traversed by several delicate veins. The Shepard Collection, No. 236.
- Parnallee*, Madura, Madras, India. Stone. Weight, 87 grams. Fell February 28, 1857, 12 m. Fragment with crust. Catalogue number, 8067. Gift of C. A. Young. Weight, 331.48 grams. Two fragments with crust. Crust black, pitted, and in swellings. The Shepard Collection, No. 181.
- Pawloeka*, Sartov, Russia. Stone. Weight, 5.61 grams. Fell August 2, 1882. Fragment with crust; also a vial of fragments. The Shepard Collection, No. 235.
- Petersburg*, Lincoln County, Tennessee. Stone. Weight, 30.7 grams. Fell August 5, 1855. Two fragments with crust. Crust shiny black and pitted and in swellings. The Shepard Collection, No. 179.
- Pillistfer*, Aukoma, Poland, Russia. Stone. Weight, 2.6 grams. Fell August 8, 1863, 12.30 p. m. Fragment from interior. The Shepard Collection, No. 192.
- Pipe Creek*, Bandera County, Texas. Stone. Weight, 168 grams. Found 1887. Polished section. Ground mass brownish black, granular, compact. Catalogue number, 83466.
- Plymouth*, Marshall County, Indiana. Iron. Weight, 182 grams. Found 1893 (1883?). Polished slab 5.5 by 5.5 by 0.7 cm. Catalogue number, 83464.
- Politz*, near Gera, Reuss, Germany. Stone. Weight, 0.163 grams. Fell October 13, 1819, 8 a. m. Fragment with crust. The Shepard Collection, No. 144.
- Prairie Dog Creek*, Decatur County, Kansas. Stone. Weight, 220 grams. Known 1893. Mass with crust. Crust scorified on one surface, papillated on another. The Shepard Collection, No. 244.
- Prambanan*, Java. Iron. Weight, 2.3 grams. Found 1797. Fragment. The Shepard Collection, No. 11.
- Priestown*, Highland County, Ohio. Stone. Weight, 2.45 grams. Fell February 13, 1893. Fragment with dull black, papillated, and somewhat blebby crust. Ground mass ash gray, fine granular, and compact. Structure chondritic. Catalogue number, 83226. Gift of F. W. Clarke.
- Pultusk*, Poland, Russia. Stone. Weight, 304.76 grams. Fell January 30, 1868, 7 p. m. Seven complete individuals. Crust dull black, more or less papillated and pitted. A cross section of an individual with crust and polished surface. The Shepard Collection, No. 201. Weight, 158 grams. Complete individual with dull black, papillated, and somewhat pitted crust, and showing a portion of the interior. Catalogue number, 44477.
- Puquios*, Chile. Iron. Weight, 28 grams. Found 1885. Two fragments, one etched. Weight, 10.3 grams and 17.7 grams. Catalogue number, 49054. Gift of Ward and Howell.

- Putnam County*, Georgia. Iron. Weight, 328 grams. Found 1839. Oxidized mass showing cleavage. The cleavage plates separated by taneite. Catalogue number, 46518. Gift of J. Berrien Lindsley.
- Weight, 68.55 grams. Four fragments. The Shepard Collection, No. 28.
- Queenggongk*, Pegu, Burma. Stone. Weight, 19.65 grams. Fell December 27, 1857. Fragment with crust. One vial of powder. The Shepard Collection, No. 184.
- Rafraüti*, Emmenthal, Bern, Switzerland. Iron. Weight, 23 grams. A polished section. Catalogue number, 84804.
- Rakorka*, Tula, Russia. Stone. Weight, 23.5 grams. Fell November 20, 1878. Fragment with crust indented with broad shallow pits. The Shepard Collection, No. 227.
- Ranchito*, Bacubirito, Sinaloa, Mexico. Iron. Weight, 14.4 grams. Found 1871. Fragment with original and etched surfaces. Delicate Widmanstättian figures. Catalogue number, 51669. Gift of G. E. Bailey.
- Weight, 171.4 grams. Found 1871. Part of mass with original and etched surfaces. The Shepard Collection, No. 102.
- Rasguta*, Tocavita, United States of Colombia. Iron. Weight, 15 grams. Found 1810. Small polished section. The Shepard Collection, No. 16.
- Weight, 0.895 grams. Two fragments, etched. Widmanstättian figures typical. Catalogue number, 45695.
- Renazzo*, near Cento, Ferrara, Italy. Stone. Weight, 7.20 grams. Fell January 15, 1824. Fragment with crust. The Shepard Collection, No. 149.
- Richmond*, Virginia. Stone. Weight, 3.69 grams. Fell June 4, 1828, 8.30 a. m. Fragment from interior. The Shepard Collection, No. 155.
- Rochester*, Fulton County, Indiana. Stone. Weight, 2 grams. Fell December 21, 1876. Fragment with crust. Catalogue number, 46078.
- Weight, 48.27 grams. Two fragments with dull black blebby crust. The Shepard Collection, No. 221.
- Roeburne* (200 miles southeast of), West Australia. Iron. Weight, 157 grams. Found 1892. Section etched, showing typical Widmanstättian figures with scattering grains of troilite. The Shepard Collection, No. 109.
- Routon*, Wellington, Shropshire, England. Iron. Weight, 19.5 grams. Fell April 20, 1876. Slice, 4.2 by 1.2 by 0.5 cm. Catalogue number, 47327.
- Ruff's Mountain*, Lexington County, South Carolina. Iron. Weight, 9.7 grams. Found 1844. Fragment. Catalogue number, 46066.
- Weight, 5,461 grams. Large block etched on one face and showing Widmanstättian figures. Two small fragments. The Shepard Collection, No. 46.
- Russell Gulch*, Gilpin County, Colorado. Iron. Weight, 76 grams. Found 1863. Rectangular section 4.5 by 1.7 by 1.2 cm. One surface that of original mass; another etched, having a granular or stippled appearance and containing numerous grains of taenite (?). On another face is a cavity or cast of a troilite nodule. Catalogue number, 81349. The United States Geological Survey.
- Sacramento Mountains*, Eddy County, New Mexico. Iron. Weight, 4,420 grams. Found 1876. Cross section of mass. One surface etched, showing well-marked Widmanstättian figures with a few small scattered nodules of troilite. Catalogue number, 84726.
- Saint Francois County* (southeast Missouri), Missouri. Iron. Weight, 5.6 grams. Found 1863. Fragment. The Shepard Collection, No. 72.
- Weight, 275 grams. One slab; weight, 245 grams. Two fragments; weight, 30 grams. Catalogue number, 47747.
- Saint-Mesmin*, near Troyes, Aube, France. Stone. Weight, 69 grams. Fragment with dull black crust. Catalogue number, 84826.
- Weight, 1.59 grams. Fell May 30, 1866. Fragment with crust. The Shepard Collection, No. 199.

- Salles*, near Villefranche, Rhône, France. Stone. Weight, 41 grams. Fragment with sawn and fractured surfaces showing brecciated structure; also a portion of the dull black crust. Catalogue number, 84827.
Weight, 2 grams. Fell March 12, 1798. Gray powder. The Shepard Collection, No. 130.
- Salt Lake City*, Utah. Stone. Weight, 2.81 grams. Found 1869. Fragment with brownish black crust. Catalogue number, 47401.
- Salt River*, Kentucky. Iron. Weight, 51.56 grams. Found 1850. Two sections; weight, 26.2 grams and 25.36 grams. Etched surface shows Neumann lines. The Shepard Collection, No. 47.
- San Angelo*, Tom Green County, Texas. Iron. Weight, 607 grams. Found July, 1897. Section. One face etched, showing Widmanstätten figures with several cracks or fissures, the larger of which are filled with graphitic carbon. Catalogue number, 84811.
- Sanchez Estate*, Coahuila, Mexico. Iron. Weight, 183.7 grams. Two fragments, one showing fracture. The Shepard Collection, No. 61.
- San Emigido Range*, San Bernardino County, California. Stone. Weight, 119 grams. Catalogue number, 47833.
- San Luis Potosi*, Mexico. Iron. Weight, 57.4 grams. Rectangular fragment, three faces etched, showing Widmanstätten figures. One face marked "Parte de aerolito del Estado de S. Luis Potosi caido en el Año de 1871;" another marked "a Ullis S. Grant." Catalogue number, 47190. Received among the Grant relics.
- Santa Catharina*, Rio San Francisco do Sul, Brazil. Iron. Weight, 253.9 grams. Known, 1873. (a) Section showing no evidence of alteration. One surface etched; Widmanstätten figures broad, with scattering plates of tenite and some troilite. Analysis shows 36 per cent of nickel. (b) Two fragments somewhat oxidized on surface, but with a compact metallic interior. (c) Complete mass apparently altered to limonite; surface somewhat pitted by decay. The Shepard Collection, Nos. 87, 88, and 105.
Weight, 82.4 grams. Mass but slightly altered; a polished surface, having a good metallic luster. Catalogue number, 47360.
- Santa Rosa*, Coahuila, Mexico. Iron. Weight, 19.3 grams. Found 1837. Polished fragment. Catalogue number, 45744. Gift of N. T. Lupton, who described it in *American Journal of Science*, 3d Ser. XXIX, p. 232.
- Sarepta*, Saratov, Russia. Iron. Weight, 3.3 grams. Found 1854. One lot of turnings. The Shepard Collection, No. 60.
- Saskatchewan River*, Victoria, British Columbia. Iron. Weight, 125 grams. Found 1871. The Shepard Collection, No. 79.
- Schönenberg*, Pfaffenhausen, Burgau, Swabia, Bavaria, Germany. Stone. Weight, 8 grams. Fell December 25, 1846. Fragment with crust. Crust surface thick, scoriaceous, and somewhat shining. Ground mass dark ash gray, with light and dark chondri and metallic grains, the latter occasionally coarse. Interior traversed by narrow veins of nickel iron. Catalogue number, 84599.
- Schwetz*, Prussia, Germany. Iron. Weight, 10.55 grams. Found 1850. Fragment. The Shepard Collection, No. 48.
- Scottsville*, Allen County, Kentucky. Iron. Weight, 99.8 grams. Found 1867. (a) Section, weight 66.5 grams, contains troilite nodules. (b) Section, weight 33.3 grams. Etched surface contains troilite nodules and presents a granular or stippled appearance overlaid with a network of fine lines. (c) Cast of original mass. Catalogue number, 47184.
Weight, 713 grams. Cross section etched, showing Neumann lines. The Shepard Collection, No. 80.

Scriba, Oswego County, New York. Iron. Weight, 9.15 grams. Fragment. Etched surface shows no structure, but has a granular or stippled appearance. Catalogue number, 4651.

Weight, 61.33 grams. Polished section. The Shepard Collection, No. 23.

Searsport, Waldo County, Maine. Stone. Weight, 16 grams. Fell May 21, 1871, 8.15 a. m. Two fragments from interior. Catalogue number, 8068. Gift of A. C. Hamlin.

Weight, 62.5 grams. Fragment with dull black papillated crust. The Shepard Collection, No. 211.

Seeläsgen, Brandenburg, Prussia, Germany. Iron. Weight, 104.5 grams. Found 1847. Cross section of mass. Etching shows the mass to be made up of irregular plates of the nickel-iron alloys. Catalogue number, 47321.

Weight, 111.6 grams. Etched slab showing irregular lines of troilite and plates of nickel-iron alloy. The Shepard Collection, No. 44.

Seneca Falls, near Waterloo, Cayuga County, New York. Iron. Weight, 80.2 grams. Found 1851. Section of mass. The Shepard Collection, No. 49.

Senhadja, Annale, Constantine, Algeria. Stone. Weight, 17.5 grams. Fell August 25, 1865. Fragment with light-brown crust differing but little in color from that of the ground mass. Catalogue number, 48823.

Shalka, near Bissempore, Bancoorah, Bengal, India. Stone. Weight, 53 grams. Fell November 30, 1850. Fragment with crust. Catalogue number, 84791.

Shingle Springs, Eldorado County, California. Iron. Weight, 32.4 grams. Found 1869-70. Fragment. Catalogue number, 47359.

Shytl, Dacca, Bengal, India. Stone. Weight, 1.32 grams. Fell August 11, 1863. Fragment from interior. The Shepard Collection, No. 193.

Siena, Tuscany, Italy. Stone. Weight, 6.75 grams. Fell June 16, 1794. Complete individual, showing crust and interior. The Shepard Collection, No. 128.

Sitahali, near Nurrah, Raipur, Rajputana, India. Stone. Weight, 13.5 grams. Fell March 4, 1875. Fragment with crust. Catalogue number, 47332.

Ski, Amt Akershus, Norway. Stone. Weight, 0.25 grams. Fell December 27, 1848. Fragment. Catalogue number, 46611.

Weight, 1 gram. Fragment with crust. The Shepard Collection, No. 172.

Slobodka, Juchnow, Smolensk, Russia. Stone. Weight, 3.7 grams. Fell August 10, 1818. Fragment. Catalogue number, 81163. Gift of R. de Kroustchoff.

Smithland, near Salem, Livingston County, Kentucky. Iron. Weight, 12.935 grams. Found 1839-40. The Shepard Collection, No. 30.

Smiths Mountain, Rockingham County, North Carolina. Iron. Weight, 58.8 grams. Found 1863. Thin slab, etched, coarse Widmanstätten figures with scattered grains of troilite. Catalogue number, 47335.

Smithville, De Kalb County, Tennessee. Iron. Weight, 214 grams. Found 1840. Section of mass with original and polished surface. Shows large troilite nodule. Catalogue number, 83463.

Weight, 1,937 grams. Iron. Found, 1893. A portion of mass; natural surface in part altered from occluded chlorides. One surface showing nodules of troilite. The Shepard Collection, No. 106.

Sokobanja (Sarbanovac), Servia. Stone. Weight, 1.75 grams. Fell October 13, 1877, 2 p. m. Fragment with crust. Catalogue number, 46075.

Weight, 15.98 grams. Fragment with crust. The Shepard Collection, No. 224.

Stålldalen, Nya Kopparberg, Dalecarlia, Sweden. Stone. Weight, 151.7 grams. Fell June 28, 1876, 11.30 a. m. Two fragments with crust. Crust surface indented with broad shallow pits. Ground mass shows fragmentary slickensides. The Shepard Collection, No. 220.

Stannern, Iglau, Moravia, Austria. Stone. Weight, (a) 14 grams; (b) 33 grams. Fell May 22, 1808, 6 a. m. (a) Fragment with crust. (b) Nearly complete individual; crust surface shiny black, papillated and showing lines of flow. Catalogue numbers, (a) 47325; (b) 47972.

Stannern, Iglau, Moravia, Austria—Continued.

Weight, 25.70 grams. Fragment with glossy black to shiny crust. The Shepard Collection, No. 136.

Stanton, Augusta County, Virginia. Iron. Weight, (a) 145 grams; (b) 9.86 grams. Found (a) 1858-59, (b) 1887. (a) Mass described by Mallet in 1871; a rectangular slab etched, showing coarse Widmanstätten figures with scattering grains of troilite. (b) Mass described by Kunz, found 1887. Fragments. Weight, 9.86 grams, much oxidized. Catalogue numbers, (a) 46623; (b) 46621.

Weight, 1,662 grams. Cross section of mass containing large troilite nodule. Etched surface shows typical Widmanstätten figures. The Shepard Collection, No. 78.

Staropol, Caucasus, Russia. Stone. Weight, 52.4 grams. Fell March 24, 1857. Fragment with crust. Ground mass ash gray and fine granular. Catalogue number, 81171. Gift of R. de Kronstchoff.

Steinbach, Saxony, Germany. Stony iron. Weight (a) 65.45 grams, (b) 16.8 grams. Fell 1164 (?). (a) Rittersgrün, found 1847. Section with crust. The stony portion exceeds the metallic, which consists chiefly of nickel iron with some small masses of troilite. On one surface the metallic portion has been etched, showing Widmanstätten figures. (b) Fragment. The Shepard Collection, Nos. (a) 113, (b) 115.

Weight, (a) 38 grams, (b) 2 grams, (c) 53.7 grams. Fell 1164? (a) Rittersgrün, found 1847. Slice polished; the stony portion exceeds the metallic. The latter etched, showing typical Widmanstätten figures. (b) Steinbach, found before 1751. Fragment; the metallic portion has been etched, showing Widmanstätten figures. (c) Breitenbach, found 1861. Catalogue numbers (a) 12463 (gift of Adrian Van Sinderen), (b) 47971, (c) 47331.

Suphee, Goruckpur, India. Stone. Weight, 4.3 grams. Fell January 19, 1865. Fragment with crust. Crust contains small globules of nickel iron. The Shepard Collection, No. 197.

Tabor, Bohemia, Austria. Stone. Weight, 2.45 grams. Fell June 3, 1753, 8 p. m. Section from interior. The Shepard Collection, No. 123.

Tajgha, Krasnojarsk, Siberia. Iron. Weight, 64 grams. Found 1891. Fragment with original surface. Etch figures coarse and poor. The Shepard Collection, No. 246.

Tarapaca, Hemalja, Chile. Iron. Weight, 84 grams. Found 1840. Fragment. The Shepard Collection, No. 31.

Tazewell, Claiborne County, Tennessee. Iron. Weight, 152 grams. Found 1853. Irregularly shaped mass. Catalogue number, 46520. Gift of J. Berrien Lindsley.

Tennasilin, Esthland, Russia. Stone. Weight, 48.2 grams. Fell June 28, 1872. Fragment with papillated, and in part somewhat blebby, crust. Ground mass dark ash gray and coarse granular. Catalogue number, 47324.

Weight, 1.76 grams. Two fragments with a small portion of crust. The Shepard Collection, No. 214.

Tieschitz, Prerau, Moravia, Austria. Stone. Weight, 27 grams. Fell July 15, 1878. Fragment with dull black crust. The Shepard Collection, No. 226.

Timoschin, Juchnow, Smolensk, Russia. Stone. Weight, 6.8 grams. Fell March 25, 1807. Fragment from interior. Catalogue number, 81166. Gift of R. de Kroustchoff.

Weight, 15 grams. Fragment from interior. The Shepard Collection, No. 134.

Tjabé, Bodgo-Negoro, Padangan, Rembang, Java. Stone. Weight, 29.1 grams. Fell September 19, 1869. Fragment with crust. The Shepard Collection, No. 208.

Toluca, Niquipilco, Mexico. Iron. Found 1784. Weight, 688 grams. (a) Etched slice, weight, 850 grams; Widmanstätten figures distinct; contains irregularly shaped nodules of troilite. (b) Complete individual; weight, 99.75 grams; surface pitted and somewhat oxidized. Catalogue numbers, (a) 47091, (b) 83465.

Toluca, Niquipileo, Mexico—Continued.

Complete individual, having a pitted surface. The Shepard Collection, No. 5.
Two polished and etched slices showing Widmanstättian figures. The Shepard Collection, No. 6.

Tombigbee River, Choctaw and Sumter Counties, Alabama. Iron. Weight, 2,443 grams. Found 1878. Section with original and polished surfaces. The polished surface shows masses of schreibersite irregularly arranged, and resembling, in form, Arabic writings. The ground mass contains numerous straight lines appearing like scratches, some of which are regularly arranged in parallel columns. Catalogue number, 84808.

Tomhammock Creek, Rensselaer County, New York. Stone. Weight, 9 grams. Found 1863. Thin section of mass. Catalogue number, 45694.

Weight, 8.74 grams. Two slices, polished and showing crust. The Shepard Collection, No. 195.

Tonganoxie, Leavenworth County, Kansas. Iron. Weight, 195 grams. Found 1886. Cross section of mass, one face etched, showing Widmanstättian figures, and a few small, scattered grains of troilite. Catalogue number, 84808.

Tourinmes La Grosse, Tirmont, Belgium. Stone. Weight, 9.04 grams. Fell December 7, 1863. Fragment with crust. The Shepard Collection, No. 194.

Travis County, Texas. Stone. Weight, 2,650 grams. Found June, 1889. Nearly complete mass. Surface much oxidized. Ground mass nearly black and deeply stained with rust. Catalogue number, 48488. Gift of R. T. Hill.

Trenton, Washington County, Wisconsin. Iron. Weight, 327 grams. Found 1858. Section 8.3 by 7 by 1.5 cm. Etched. Shows large troilite nodule. Catalogue number, 46613.

Weight, 91.46 grams. Two fragments. The Shepard Collection, No. 66.

Trenzano, Brescia, Lombardy, Italy. Stone. Weight, 3.8 grams. Fell November 12, 1856, 4 p. m. Fragment. The Shepard Collection, No. 180.

Trinity County, California. Iron. Weight, 3.65 grams. Found 1870. Fragments (clippings). Catalogue number, 46070.

Weight, 22.55 grams. Fragments. The Shepard Collection, No. 108.

Tucson, Arizona. Iron. Weight, 621,531 grams. The ring meteorite.

Weight, 84.5 grams. Fragment from inner circle of ring meteorite. The Shepard Collection, No. 40. (See Plate 1.)

Tucson (Carlton), Arizona. Iron. Weight, 36.84 grams. Found 1846. The Shepard Collection, No. 39.

Tucuman, Otumpa, Argentina. Iron. Weight, 23.8 grams. Found 1788. Fragment having one surface polished. The Shepard Collection, No. 7.

Tysnes, Norway. Stone. Weight, 29.3 grams. Fell May 20, 1884. Fragment from interior. The Shepard Collection, No. 238.

Union County, Georgia. Iron. Weight, 124.5 grams. Found 1853. (a) Section having a much oxidized surface and showing cleavage lines; weight, 87 grams. (b) Section, weight 36.5 grams. (c) Vial of oxidized crust. The Shepard Collection, No. 53.

Unknown iron. Weight, 3,510 grams. Found without record in old Smithsonian Institution collection. Mass nearly complete. Catalogue number, 46612.

Urecht (Blaauw Kapel), Holland. Stone. Weight, 8.8 grams. Fell June 2, 1843. Two fragments, one 3.1 grams with crust; another from interior, 5.7 grams. The Shepard Collection, No. 167.

Weight, 28.7 grams; 25.9 grams of coarse powder. One fragment 2.81 grams. Catalogue number, 47326.

Vaca Muerta, Atacama, Chile. Stony iron. Weight, 449 grams. Known 1861. Mass with original surface. The nonmetallic portion in excess of the metallic. Catalogue number, 6991. Gift of the University of St. Jago, Chile.

Vaca Muerta, Atacama, Chile—Continued.

Weight, 27.63 grams; (b) 29.8 grams. Found 1862; (b) 1867-68. Three fragments, two of which are thin sections; the third shows original and polished surfaces. Structure somewhat granular, with the metallic and nonmetallic portions about equally distributed. (b) Mejillones. Thin section in which the metallic portion is distributed in occasional nodules and filiform shapes throughout the stony ground mass. The Shepard Collection, Nos. 119; b, 116.

Veramin (Karand), Teheran, Persia. Stony iron. Weight, 6.5 grams. Fell February, 1880. Fragments. Catalogue number, 84700. Gift of G. P. Merrill.

Victoria West, Cape Colony, South Africa. Iron. Weight, 2.15 grams. Found 1862. Fell (?) 1862. Fragments of crust almost completely altered to limonite. The Shepard Collection, No. 70.

Vouillé, near Poitiers, Vienne, France. Stone. Weight, 14.57 grams. Fell May 13, 1831. Fragment from interior. The Shepard Collection, No. 158.

Waconda, Mitchell County, Kansas. Stone. Weight, 8 grams. Found 1874. Two fragments, one with crust. Catalogue number, 46609. Gift of G. W. Chapman.

Weight, 996.55 grams. Mass with pitted and blebby crust, showing lines of flow; also a fragment from interior. The Shepard Collection, No. 213.

Warenton, Warren County, Missouri. Stone. Weight, 11 grams. Fell January 3, 1877, 7 a. m. Fragment from interior. Catalogue number, 46077.

Weight 27.25 grams. Fragment with crust. The Shepard Collection, No. 222.

Welland, Ontario, Canada. Iron. Weight, 36.5 grams. Found 1888. Section having original and etched surface. Widmanstätten figures coarse and regular, with scattering grains of troilite. Lines of octahedral cleavage well marked. The Shepard Collection, No. 103.

Werchue-Udinsk, River Niro, Trans Baikal, Siberia. Iron. Weight, 36.30 grams. Found 1854. Etched section; Widmanstätten figures coarse. The Shepard Collection, No. 58.

Weston, Fairfield County, Connecticut. Stone. Weight, 17 grams. Fell December 14, 1807, 6.30 a. m. Fragment from interior. Catalogue number, 47743.

Weight, 74.37 grams. Three fragments, one without crust. The Shepard Collection, No. 135.

Wichita County, Brazos River, Texas. Iron. Weight, 20.8 grams. Found 1836. Fragment 4 by 1 by 0.7 cm. Catalogue number, 45273.

Weight, 212.4 grams. (a) Section with original and etched surface; weight, 143 grams; (b) section as above; weight, 69.40 grams. Both show coarse Widmanstätten figures, with nodules of troilite and flakes of schreibersite. The Shepard Collection, No. 26.

Wold Cottage, Yorkshire, England. Stone. Weight, 13.02 grams. Fell December 13, 1795, 3.30 p. m. Fragment with crust and polished surface. The Shepard Collection, No. 129.

Wooster, Wayne County, Ohio. Iron. Weight, 2.86 grams. Found 1858. Rectangular fragment. The Shepard Collection, No. 65.

Yatoor, near Nellore, Madras, India. Stone. Weight, 2.81 grams. Fell January 23, 1852, 4.30 p. m. Fragment from interior. The Shepard Collection, No. 174.

Zaborzika, Volhynien, Russia. Stone. Weight, 4.1 grams. Fell April 10, 1818. Fragment from interior. Ground mass ash gray, fine granular, friable. Catalogue number, 81172. Gift of R. de Kroustchoff.

Zacatecas, Mexico. Iron. Weight, 175.3 grams. Found 1792.

Weight 14.8 grams. Fragment. Catalogue number, 46524. Gift of J. Berrien Lindsay. Fragment with original and etched surfaces. Widmanstätten figures good. The Shepard Collection, No. 5.

Zavid, Bosnia, Bohemia, Austria. Stone. Weight, 31 grains. Fell August 1, 1897. Fragment with dull brown crust. Ground mass ash-gray, and containing numerous chondri and grains of iron and troilite. Catalogue number, 84741.