Italian meteorites

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Summary. In an attempt to assemble together the sparse information regarding the eighty meteorites recorded as having fallen in Italy, tables have been prepared dealing respectively with chronology, name and generalities, synonymy, and literature, together with a distribution map. They are intended not only to help correct identification of pieces widespread in museums or private collections, but also to begin a labelling unification process, in order to avoid confusion arising from a wide variety of synonyms.

THE literature on stones and irons that have fallen from outer space in Italy has never been incorporated into one complete inventory. This is the first attempt to prepare such a list, which has been planned in five sections in the hope of meeting the demands not only of museum visitors but also of the specialist investigator. The chief source drawn upon for literature is Brown's well-known 'Bibliography on Meteorites'. Information from catalogues and data from private communications have also been incorporated. Where possible, personal inspections of material found either in collections or as single specimens were made.

Table I is a chronologically arranged list of Italian falls or finds, including a number of doubtful falls that were either unknown previously or otherwise forgotten.

In the map (fig. 1), the geographical location of both falls and finds is shown. Full circles represent meteorites actually existing in museums or collections, while for doubtful locations or for lost meteorites the symbol ⊙ is used.

Table II is an alphabetically arranged list incorporating only meteorites actually existing in museums or private collections. The following information is supplied for each meteorite: Name and synonyms; position of the fall; date and time; classificatory description; present repositories of material, with weight and original total weight, if known; and selected references to the literature.

In order to facilitate identification or location and because of the

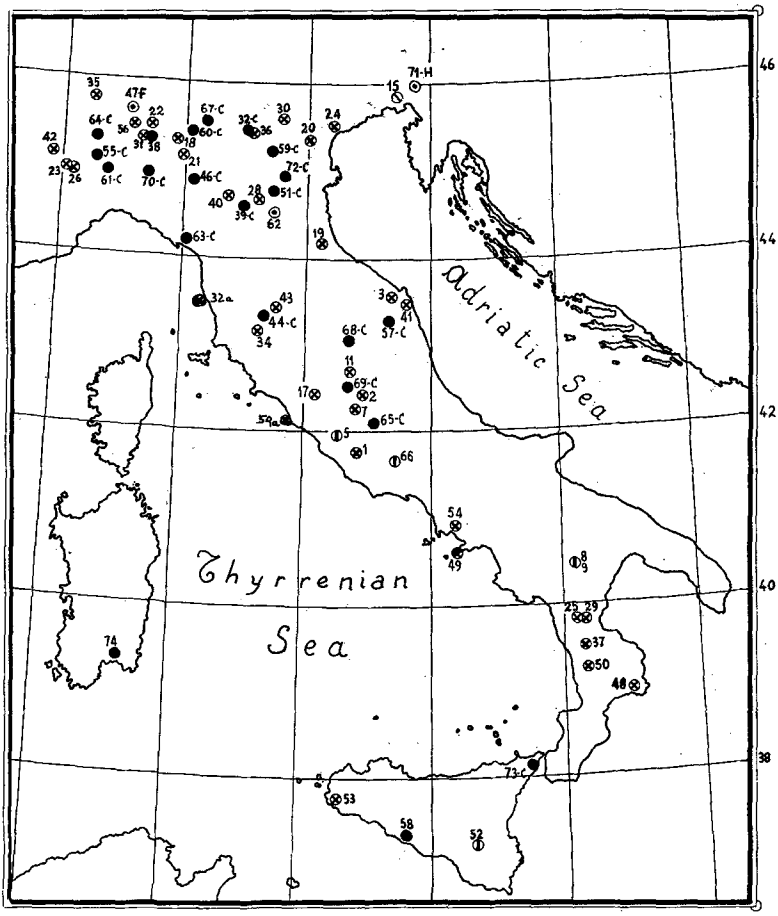

FIG. 1. Distribution map of Italian meteorites. The numbers refer to table I. ● meteorites with known repositories; ⊙ meteorites lost or with unknown repositories; ⓘ doubtful and imprecisely cited localities; ⊗ meteorites cited only by historians; C, chondrite; H, hexahedrite; F, finds.

conspicuous number of synonyms resulting from an inspection of old labels and inventory registers, table III has been prepared; it lists alphabetically the synonyms of the actually existing Italian meteorites; no attention has been paid to synonyms referring to lost, or at least believed to be lost, meteorites.

An attempt has been made to provide each meteorite with a complete

bibliography, hereby following the example of Wülfing (ref. 136) in his well-known, but today outdated, work; the list of references assembles the most significant papers on Italian meteorites and related subjects of research.

The author recognizes that the lists here presented may not all be complete or correct. They only represent the first attempt to schematically assemble together the result of an obviously long and tedious operation of inspecting old labels and inventory numbers, searching and cross-checking all the information available to him on the subject. He will therefore be greatly indebted to those who, on reading this paper, might make constructive suggestions or corrections, point out glaring omissions, or supply him with new information.

TABLE I. Chronologically arranged Italian meteorites (including some pseudo-meteorites). A few very doubtful records have been omitted (see in particular ref. 60, p. 226). Authentic falls in bold type; where there is no comment on other falls, the evidence for their meteoritic nature is not conclusive.

1. 654 [B.C.]	*Monti Albani (Rome)*	*Stone shower*	*References:* 1, 35, 58, 59, 60, 68, 117, 131
2. 542	Rieti		1, 35, 117
3. 459	Picenum (Ancona region)	Stone shower	5, 60, 117, 131
4. 343	Rome Doubtful; probably only hail.	Stones	3, 60, 117, 131
5. 206	Italy	Stone	60, 68, 69, 128
6. 176	Lacus Martis (Sabina region).	Stone	1, 41, 60, 68, 131
7. 90	Sabina region	Stone	35, 68
8. 56	Lucania	Iron	35, 60, 68
9. 54	Lucania	Spongy iron	2, 41, 117, 131
10. 650 [A.D.]	Italy		60, 68, 117
11. 921	Narni (between Terni and Spoleto).	Big stones	41, 60, 117, 131
12. 956	Italy		60, 68, 117
13. 963	Italy		60, 68, 117
14. Between 965 and 971 (under Pope Johannis XIII)		Stone	34, 35, 60, 68, 117, 131
15. 1112	Aquileia Probably a genuine meteorite.	Iron ?	10, 41, 60, 131
16. 1440	Piedmont	Iron	13, 131

17. 1474	Viterbo	Two stones	13, 35, 60, 117, 131, 147
18. 1491, 22 March	**Rivolta de Bassi (Crema)** A genuine meteorite but nothing preserved.	Stones	35, 41, 60, 68, 117, 131
19. 1496, 26 or 28 Jan.	Near **Valdinoce** between Cesena and Forli. Clearly a genuine fall, but nothing preserved.	Three stones	4, 5, 29, 36, 41, 60, 68, 131
20. 1510	Padova Probably a confusion with the shower of 1511.	1200 stones	15, 117, 131
21. 1511, 4 or 11 Sept.	River Adda, near **Crema** Probably a genuine fall, but nothing now preserved.	Stone shower	36, 41, 49, 60, 68, 117, 131
22. 1525, 28 or 29 June	Milano		60, 117
23. 1550 or 1570	Piedmont	Iron	35, 60, 68, 131
24. 1569, 14 or 15 Sept.	Venice		60, 117
25. 1583, 9 Jan.	**Castrovillari**, Cosenza Clearly a genuine fall, but nothing preserved.	A *big* stone (33 lb).	13, 29, 36, 41, 60, 68, 117, 131
26. 1583, 2 March	Piedmont Probably a genuine fall.	A stone	41, 60, 117, 131
27. 1585	Italy	A stone	60, 117, 131
28. 1596, 1 March	Crevalcore, Bologna	A stone	35, 41, 60, 68, 117, 131
29. 1613	Castrovillari, Cosenza Probably an error of date, and refers to the 1583 fall.	A stone	6
30. 1635, 7 July	Calce, Vicenza		9, 35, 60, 68, 117, 131
31. 1650 or 1660, 4 Sept.	Milan		35, 60, 68, 131
32. 1668, 19 or 21 June	**Vago**, Verona	Stone shower	See table II
32*a*. 1676, 21 March	Livorno After a notable meteor, a stone is said to have been heard to fall into the sea.		11, 12, 60, 131
33. 1683, 12 Jan.	Calabre Probably an error for 1583 (Castrovillari).		60, 117, 131
34. 1697, 13 Jan.	Pentolina, Siena Probably a genuine fall.	Stones	29, 35, 60, 68, 117, 131
35. 1719	Orta (Piedmont)	Stone shower	13

36. 1733	Verona	Stone	14
37. 1755, July	Terranova (Crati river, Calabria). Probably a genuine fall, perhaps of a carbonaceous chondrite.	Stones	24a, 35, 60, 68, 131
38. 1760	**Brianza,** Milan region	Stone	See table II
39. 1766, 6 July	**Albareto,** Modena	A stone of 12 Kg.	See table II
40. 1766, 15 Aug.	Novellara, Reggio E. Very doubtful.	Stone	18, 41, 60, 117, 131
41. 1776 or 1777, Jan. or Feb.	S. Anatolio, Ancona Probably a genuine fall.	Stone shower	27, 29, 35, 41, 60, 68, 117, 131
42. 1782	Torino, near Convent of Capuccins.	Stones	21, 27, 41, 60, 68, 117, 131
43. 1791, 17 May	Castelnuovo Berardenga, Siena.		29, 35, 41, 60, 68, 117, 131
44. 1794, 16 June	**Siena**	Stones	See table II
45. 1805, Nov.	Aseo, Calvi		60, 61, 62, 68
46. 1808, 19 April	**Borgo San Donino,** Parma.	Stones	See table II
47. 1813 (found)	Milan (Collina di Brianza) Is clearly a pseudometeorite.		32, 33, 41, 60
48. 1813, 14 March	Cutro, Calabria Very doubtful.	Stones	35, 41, 57, 60, 68, 117, 131
49. 1819, April	Massa Lubrense, Salerno	Stone	35, 41, 60, 68
50. 1820, 29 Nov.	Cosenza	Stones	60, 117, 131
51. 1824, 15 Jan.	**Renazzo,** Ferrara	Stones	See table II
52. 1826, May	Mineo, Catania	Iron	160
53. 1834, 15 Dec.	Marsala, Trapani Very doubtful.		60, 68, 204
54. 1839, 29 Nov.	Napoli province Very doubtful.	Stones	60, 117
55. 1840, 17 July	**Cereseto**	Stone	See table II
56. 1841, July	Milan province		60, 68, 131, 204
57. 1846, 8 May	**Monte Milone,** Macerata	Nine stones	See table II
58. 1853, 10 Feb.	**Girgenti** (= Agrigento)	Stones	See table II
59. 1855, 30 Aug.	**Legnago,** Verona	Stone	See table II
59*a*. 1855, 17 Oct.	Civitavecchia, Lazio Fell in the sea near a ship; probably genuine.		54, 55, 60

60. 1856, 12 Nov.	**Trenzano,** Brescia	Three stones	See table II
61. 1860, 2 Feb.	**Alessandria**	Seven stones	See table II
62. 1863, 10 Aug.	Bologna		72.
63. 1868, 30 Jan.	**Lerici** (La Spezia)	Stone	88, 166, 170, 184
	Doubtful; probably a Pułtusk stone.		
64. 1868, 29 Feb.	**Motta de Conti,** Vercelli	Three stones	See table II
65. 1872, 31 Aug.	**Orvinio,** Rieti	Stones	See table II
66. 1877	Supino, Frosinone		101
67. 1883, 16 Feb.	**Alfianello,** Brescia	Stones	See table II
68. 1886, 24 May	**Assisi,** Perugia	Stone	See table II
69. 1890, 3 Feb.	**Collescipoli,** Terni	Stone	See table II
69*a*. 1901, 30 July	Corchiano, Viterbo		147
	A bolide was observed, but the material collected proved to be a tuff.		
70. 1903, 12 July	**Valdinizza,** Pavia	Stone	See table II
71. 1908, 31 March	**Avče,** Gorizia	Iron	See table II
72. 1910, 21 Jan.	**Vigarano,** Ferrara	Two stones	See table II
73. 1955, 16 July	**Messina**	Stone	See table II
74. 1956, 19 Feb.	**Sinnai,** Cagliari	Stone	See table II

74*a*. A fragment of iron found at Pompeii and regarded by Chladni (ref. 41) as meteoritic appears to contain no nickel (ref. 79).

TABLE II. Extant Italian meteorites, with their present repositories and bibliographies. Weights (where available) in grams unless otherwise shown. For key to repositories see p. 222.

ALBARETO, Modena; 44° 41′ N., 10° 27′ E.; fell 1766, 6 July, 17.00 hours. Spherical olivine-hypersthene chondrite. One stone of about 12 Kg.

Ariz. 15, Berl. 489, Bol. U. 60, Bud. M. 60, Gött. < 0·1, Lond. G. —, Lond. N. 51·5, Mod. 697, Par. Ec. 82, Rome 145, Pra. 3, Vien. B. 73, Vien. U. 46, Yale 1. Ref. 18, 35, 36, 41, 60, 61, 62, 65, 68, 70, 71, 73, 74, 77, 80, 81, 88, 103, 119, 127, 131, 138, 144, 159, 166, 170, 172, 179, 183, 184, 186, 192, 195, 201, 206a, 217, 220.

ALESSANDRIA, Piedmont; 44° 53′ N., 8° 44′ E.; fell 1860, 2 Feb., 11.45 hours. Veined grey olivine-bronzite chondrite. About seven stones, together < 4 Kg.

Berl. 1, Bol. U. 12, Bud. M. 100, Harv. 6, Lond. G. —, Lond. N. 172, Mod. < 1, Neu. 3, Par. Ec. 25, Par. M. 35, Par. U. 52, Pra. 21, Rome 52, Stras. 61, Tar. 31, Tur. 256, Vien. M. 78, Yale 15·05. Ref. 61, 62, 65, 66, 67, 68, 71, 73, 74, 75, 78, 80, 81, 88, 119, 127, 135, 137, 138, 143, 144, 153, 166, 169, 170, 172, 179, 184, 189, 195, 201, 206a, 210, 213, 217, 220, 221.

ALFIANELLO, Brescia; 46° 13′ N., 10° 9′ E.; fell 1883, 16 Feb. 14.43 hours. Intermediate olivine-hypersthene chondrite. One stone of about 228 Kg.

Ariz. 297, Aube 27, Berl. 12·759 Kg, Bol. G. 1809, Bol. U. 1150, Bonn 195, Braun. 21, Bres. 5106, Bud. M. 5897, Cam. 48, Chic. 6834, Cop. 1490, Dres. 327, Dub. 169·5, Flor. 403, Gött. 76·5, Greis. 38, Ham. 595, Harv. 726, Heid. 2, Hels. 390, Kas. 400, Kol. 175, Len. M. 227·7, Lié. 67, Lond. N. 2698, Los A. 3·3, Mad. 86, Mich. 135, Mil. 3250, Mod. 122, Mosc. AS. 67, Mosc. G. 419·5, Mosc. Ru. 71·25, Nant. —, Nap. 75, Neu. 49, New Y. 1641, Ode. 118, Pad. 39, Par. Ec. 213, Par. M. 977, Parma 134, Pav. 187, Phil. 182, Pra. 159, Riga 32, Rome 7820, Stras. 142, Tar. 7054, Tüb. 24, Tur. 620, Upp. 81, Vat. 3602, Vien. B. 599,

Vien. M. 944, Vien. U. 140, Wash. 241, Yale 336·67. Ref. 105, 106, 107, 108, 109, 110, 111, 112, 113, 114, 115, 116, 119, 120, 125, 127, 131, 132, 135, 136, 137, 138, 139, 140, 143, 144, 152, 153, 157, 158, 161, 162, 163, 164, 166, 167, 168, 169, 170, 172, 174, 176, 177, 179, 180, 182, 184, 188, 189, 190, 192, 193, 195, 197, 199, 201, 206a, 207, 208, 209, 211, 212, 214, 215, 216, 217, 219, 219a, 220, 221.

ASSISI, Perugia; 43° 4′ N., 12° 37′ E.; fell 1886, 24 May, 17.00 hours. Spherical olivine-hypersthene chondrite. One stone of about 2 Kg.
Berl. 23, Bol. U. 95, Bud. M. 275, Harv. 3, Lond. N. 151½, Par. M. 107, Para. 18, Rome 114, Tur. 227, Vat. 1·8, Vien. B. 98, Vien. M. 150. Ref. 123, 127, 131, 135, 138, 144, 166, 169, 170, 172, 179, 184, 195, 206a, 210, 220.

AVČE, Gorizia; 46° N., 13½° E.; fell 1908, 31 March, 18.45 hours. Hexahedrite. An iron of 1230 g.
Vien. M. main mass. Ref. 150, 195, 202.

BORGO SAN DONINO, Parma; 44° 47′ N., 10° 4′ E.; fell 1808, 19 April, noon. Polymict brecciated grey olivine-bronzite chondrite (howarditic chondrite of Brezina). Several stones, together < 2·5 Kg.
Berl. 15, Bol. U. 164, Gött. 1·2, Harv. 5, Lond. G. 2·2, Lond. N. 7½, Neu. 2, Par. Ec. 55, Par. M. 405, Parma 477, Rome 18, Tüb. 1, Vat. 17·5, Vien. B. 9, Vien. M. 264, Yale 9. Ref. 27, 28, 30, 35, 41, 60, 61, 62, 65, 68, 70, 71, 73, 74, 80, 81, 88, 119, 127, 131, 135, 138, 144, 166, 169, 170, 172, 179, 182, 184, 195, 206a, 210, 217, 221.

BRIANZA, Milan; 45¾° N., 9¼° E.; fell 1760. Brecciated chondrite. A little stone.
Parma 14. Ref. 7, 8, 38.

CERESETO, Alessandria; 45° 4′ N., 8° 20′ E.; fell 1840, 17 July, 07.30 hours. Brecciated spherical olivine-bronzite chondrite. One stone of about 5 Kg.
Bol. U. 41, Lond. G. 9·7, Lond. N. 124½, Los. A. 0·6, Mosc. AS. 8·9, Pra. 27, Rome 182, Tar. 39, Tüb. 1, Tur. 3370, Vat. 12, Vien. B. 156, Vien. M. 136. Ref. 45, 46, 57, 60, 61, 62, 64, 65, 68, 70, 73, 81, 88, 119, 131, 135, 138, 166, 170, 172, 179, 182, 199, 206a, 207, 213, 219, 219a, 220.

COLLESCIPOLI, Terni; 42° 32′ N., 12° 38′ E.; 1890, 3 February, 13.30 hours. Spherical olivine-bronzite chondrite. One stone of about 5 Kg.
Bol. U. 28, Bud. M. 1200, Lond. N. 485·5, Los A. 0·7, Mil. 303, Nap. 5, Neu. 6, Pra. 43, Rome 169, Stras. 65, Tar. 14, Tur. 90, Vat. 11, Vien. B. 103, Vien. M. 294, Yale 17·29. Ref. 129, 130, 133, 135, 138, 143, 158, 161, 161a, 166, 170, 172, 174, 179, 184, 189, 194, 195, 206a, 207, 213, 217, 219a, 220.

GIRGENTI, Sicily; 37° 19′ N., 13° 34′ E.; fell 1853, 10 February, 18.30 hours G.M.T. Veined white olivine-hypersthene chondrite. Three stones fell, one of about 7 lb. Recently two have been re-located, 8750 and 2151 g, respectively.
Ariz. 24, Berl. 500, Bud. M. 423. Flor. 50, Gött. 28·2, Harv. 14, Lond. G. 12·5, Lond. N. 834, Mil. —, Mosc. AS. 17·5, Nap. 65, Neu. 2, Pra. 14, Rome 1109, Stras. 18, Tar. 51, Vat. 52, Vien. M. 18, Vien. U. 18, Wash. 10·9 Kg., Yale 110·35. Ref. 60, 61, 62, 64, 70, 71, 74, 76, 80, 87, 127, 131, 138, 143, 144, 153, 163, 166, 169, 170, 172, 174, 184, 189, 192, 195, 205, 206, 206a, 213, 217, 219, 220.

LEGNAGO, Verona; 45¼° N., 11¼ ° E.; fell 1855, 30 Aug. Stone.
Tren. 2006. No published account of this 2 Kg mass has been traced.

LERICI, La Spezia; 44° 4′ N., 9° 55′ E.; fell 1868, 30 Jan. 19.00 hours. Veined grey olivine-bronzite chondrite.
Lond. N. 8, Yale 0·14. The day and time of fall, according to the only record available, are the same as those of the Pułtusk shower, which this stone

closely resembles; as there are no details or independent record of this fall, it must be considered doubtful. Ref. 88, 166, 170, 184, 195.

MESSINA, Sicily; 38° N., 15° E.; fell 1955, 16 July, 13.07 hours. Olivine-hypersthene chondrite. One stone of about 2405 g. Per. 2368. Ref. 198.

MONTE MILONE, Macerata; 43° 15′ N., 13° 18′ E.; fell 1846, 8 May, 09.15 hours. *Brecciated white olivine-hypersthene chondrite.* Several stones, together about 10 Kg.

Bol. U. 97, Flor. 280, Lond. G. —, Lond. N. 8, Mil. 326, Par. M. 162, Pisa 2044, Rome 2044, Tüb. 7, Vat. 8·5, Vien. B. 108, Vien. U. 4, Yale 3·5. Ref. 53, 60, 61, 62, 65, 68, 70, 73, 81, 88, 119, 131, 135, 138, 147, 158, 166, 170, 172, 179, 182, 184, 194, 206a, 210, 217.

MOTTA DI CONTI, Vercelli; 45° 16′ N., 8° 30′ E.; fell 1868, 29 Feb., 11.00 hours. Spherical olivine-bronzite chondrite. Several stones, together about 9 Kg.

Bol. U. 15, Bud. U. 5, Lond. N. 5¾, Mil. 10, Par. U. 19, Pra. 33, Rome 1645, Stras. 9, Tur. 6290, Vien. M. 2, Wash. 1, Yale 0·9. Ref. 83, 84, 85, 86, 119, 131, 135, 138, 143, 153, 166, 170, 172, 179, 189, 195, 206a, 217, 220.

ORVINIO, Rieti; 42° 8′ N., 12° 56′ E.; fell 1872, 31 Aug. 05.15 hours. Polymict brecciated black olivine-hypersthene chondrite (orvinite of Brezina). Several stones, together 3·4 Kg.

Ariz. 63, Berl. 38, Bud. M. 226, Lond. N. 91½, Mosc. AS. 29·5, Neu. 21, Oxf. 19·1, Par. M. 96, Pra. 5, Rome 710, Stras. 82, Tar. 64, Tur. 80, Vat. 660, Vien. B. 58, Vien. M. 585, Yale 4·33. Ref. 89, 90, 90a, 92, 93, 94, 95, 96, 97, 98, 100, 119, 127, 131, 135, 138, 143, 144, 147, 166, 170, 179, 184, 189, 192, 195, 206a, 210, 213, 217, 219, 220, 221.

RENAZZO, Ferrara; 44° 47′ N., 11° 18′ E.; fell 1824, 15 Jan. 20.30 hours. Carbonaceous chondrite. Several stones, together >10 Kg.

Berl. 2, Bol. G. 441, Bol. U. 32, Flor. 77, Harv. 68, Lond. G. 0·2, Lond. N. 15, Mil. 15, Mod. 6, Neu. 7, Par. M. 81, Parma 12, Rome 39, Tar. 6·7, Tüb. 7, Vien. B. 4, Vien. U. 113, Yale 0·85. Ref. 40, 41, 42, 57, 60, 61, 62, 65, 68, 70, 71, 73, 74, 80, 81, 88, 110, 127, 131, 135, 138, 144, 147, 166, 169, 170, 179, 182, 184, 195, 201, 203, 210, 213, 217.

SIENA, Tuscany; 43° 19′ N., 11° 20′ E.; fell 1794, 16 June, 19.00 hours. Polymict brecciated intermediate olivine-hypersthene chondrite (howarditic chondrite of Brezina). Shower of small stones, the largest about 3½ Kg.

Berl. 60, Bol. G. 734, Bol. U. 985, Bud. M. 289, Cam. 1, Cata. 110, Flor. 170, Gott. 17·5, Harv. 5, Lond. G. 105·7, Lond. N. 127½, Mil. 75, Mod. 44, Mosc. Ru. 1·43, Neu. 29, Par. M. 139, Parma 51, Pra. 57, Rome 115, Sien. 1000, Tüb. 10, Tur. 74, Vat. 0·5, Vien. B. 4, Vien. U. 192, Yale 13·68. Ref. 20, 21, 22, 23, 24, 24a, 25, 35, 36, 41, 44, 57, 60, 61, 62, 65, 68, 70, 71, 73, 74, 80, 81, 88, 119, 127, 131, 135, 138, 141, 144, 166, 169, 170, 175, 179, 182, 184, 195, 201, 206a, 210, 211, 217, 220, 221.

SINNAI, Cagliari; 39¼° N., 9¼° E.; fell 1956, 19 Feb. early a.m. Olivine-bronzite-clinoenstatite chondrite. One stone of about 2 Kg. Cagl. 1230. Ref. 200.

TRENZANO, Brescia; 45° 28′ N., 10° 20′ E.; fell 1856, 12 Nov., 16.00 hours. Veined spherical olivine-bronzite chondrite. Two stones found, together < 15 Kg.

Ariz. 18, Berl. 6, Bol. U. 5½ Kg, Bres. 1450, Gött. 2·5, Harv. 161, Lond. G. 23·7, Lond. N. 157½, Los A. 1·5, Mosc. AS. 48·5, Par. Ec. 55, Par. M. 43, Pra. 210, Rome 161, Stras. 18, Tar. 259, Vat. 15·7, Vien. B. 81, Vien. M. 1819, Yale 142·09. Ref. 56, 60, 61, 62, 63, 65, 68, 70, 71, 73, 74, 80, 81, 88, 91, 119, 127, 131, 135, 138, 143, 144, 166, 169, 170, 172, 179, 184, 189, 192, 195, 206a, 207, 210, 213, 217, 219, 219a, 220, 221.

VAGO, Verona; 45° 25′ N., 11° 8′ E.; fell 1668, 21 June, 01.19 hours. Spherical olivine-bronzite chondrite. Shower of stones, two of the biggest said to weigh 136 Kg and 91 Kg respectively.
Lond. N. 6¾, Par. M. 7, Vien. M. 26. Ref. 35, 41, 60, 61, 62, 65, 68, 70, 73, 119, 131, 135, 138, 166, 170, 179, 184, 195, 206a, 210.

VALDINIZZA, Pavia; 45¼° N., 9¼° E.; fell 1903, 12 July, 10.00 hours. Intermediate olivine-hypersthene chondrite. Two stones, of 872½ and 131½ g respectively.
Lond. N. 2½, Mil. 1003, Wash. —, S. H. Perry's Collection 720. Ref. 148, 151, 166, 170, 184, 195, 206a.

VIGARANO, Ferrara; 44° 50′ N., 11° 30′ E.; fell 1910, 22 Jan., 21.30 hours. Carbonaceous olivine-pigeonite chondrite. A stone of 11½ Kg found at time of fall, later another of 4½ Kg.
Bol. U. 87, Bud. M. 290, Harv. 32, Len. U. 72·5, Lond. N. 996, Mil. 115, Par. Ec. 100, Par. M. 133, Pra. 1189, Rome 98, Tur. 42, Vat. 106, Yale 1529·79, Perry 360. Ref. 154, 155, 155a, 158, 166, 169, 170, 172, 184, 194, 195, 203, 210, 212, 217, 218, 220, 221.

Key to repositories

Ariz.	Arizona State Univ.
Aube	Mus. d'Hist. Nat. Aube
Berl.	Berlin Univ. (Min. Dept.)
Bol. G.	Bologna Univ. (Geol. Dept.)
Bol. U.	Bologna Univ. (Min. Dept.)
Bonn	Bonn Univ. (Min. Dept.)
Braun.	Braunschweig, Nat. Hist. Mus.
Bres.	Brescia Nat. Hist. Mus.
Bud. M.	Budapest (Nat. Mus.)
Bud. U.	Budapest Univ. (Min. Dept.)
Cagl.	Cagliari Univ. (Min. Dept.)
Cam.	Cambridge Univ. Mus.
Chic.	Chicago Nat. Hist. Mus.
Cop.	Copenhagen Univ.
Dres.	Dresden Univ.
Dub.	Dublin, Nat. Mus.
Flor.	Florence Univ. (Min. Dept.)
Gött.	Göttingen Univ. (Min. Dept.)
Greis.	Greiswald Mus.
Ham.	Hamburg Univ.
Harv.	Harvard Univ. Mus.
Heid.	Heidelberg Univ.
Hels.	Helsinki Univ.
Kaz.	Kazan Univ.
Kol.	Kolozsvar Univ.
Len. M.	Leningrad Mining Mus.
Len. U.	Leningrad Univ.
Lié.	Liége Mus.
Lond. G.	London, Geol. Surv. Mus.
Lond. N.	London, British Mus. (Nat. Hist.)
Los A.	Univ. California, Los Angeles (Leonard Colln.)
Mad.	Madrid Univ.
Mich.	Michigan Univ.
Mil.	Milan Mus.
Mod.	Modena Univ. (Min. Dept.)
Mosc. AS.	Moscow, Acad. Sci. USSR
Mosc. G.	Moscow Geol. Inst.
Mosc. Ru.	Moscow Acad. Rural Econ.
Nant.	Nantes, Mus. d'Hist. Nat.
Nap.	Naples Univ. (Min. Dept.)
Neu.	Colln. of Neumann, Graz; now mostly in the Joanneum, Graz.
New Y.	Amer. Mus. Nat. Hist., New York
Ode.	Odessa Univ.
Oxf.	Oxford Univ. Mus.
Pad.	Padua Univ. (Min. Dept.)
Par. Ec.	Paris, École des Mines
Par. M.	Mus. d'Hist. Nat. Paris
Par. U.	Paris Univ.
Parma	Parma Univ.
Pav.	Pavia Univ. (Min. Dept.)
Per.	Colln. of B. Baldanza, Perugia
Phil.	Philadelphia, Acad. Nat. Sci.
Pisa	Pisa Univ.
Pra.	Prague, Narod. Mus.
Riga	Riga Univ.
Rome	Rome Univ. (Min. Dept.)
Sien.	Siena, Mus. Accad. Sci.
Stras.	Strasbourg Univ.
Tar.	Tartu (Dorpat) Univ.
Tren.	Trento Mus.
Tüb.	Tübingen Univ.
Tur.	Turin Univ.

Upp.	Uppsala Univ.
Vat.	Vatican Mus.
Vien. B.	Colln. of von Braun, now in Vienna Nat. Hist. Mus.
Vien. M.	Vienna Nat. Hist. Mus.
Vien. U.	Vienna Univ. (Min. Dept.)
Wash.	Washington, U.S. Nat. Mus.
Yale	Yale Univ., Peabody Mus. Nat. Hist.

TABLE III. Synonyms of extant Italian meteorites

Agrigento, *see* Girgenti
Albarello, *see* Albareto
Alboreto, *see* Albareto
Alboretto, *see* Albareto
Alexandria, *see* Alessandria
Allessandria, *see* Trenzano
Anticoli Corradi, *see* Orvinio
Antifona, *see* Collescipoli
Arenazzo, *see* Renazzo
Avse, *see* Avče
Bettona, *see Assisi*
Borgo Sandonino, *see* Borgo San Donino
Borgo San Donnino, *see* Borgo San Donino
Borgo S. Donnino, *see* Borgo San Donino
Brescia, *see* Alfianello and Trenzano
Caldiero, *see* Vago
Camaro, *see* Messina
Camaro Superiore, *see* Messina
Canemorto, *see* Orvinio
Cariani, *see* Vigarano
Casale, *see* Cereseto and Motta di Conti
Casale Monferrato, *see* Cereseto
Casale Piemonte, *see* Motta di Conti
Casignano, *see* Borgo San Donino
Cella di Costamezzana, *see* Borgo San Donino
Cento, *see* Renazzo
Chiari, *see* Trenzano
Collantifona, *see* Collescipoli
Colle Antifona, *see* Collescipoli
Cosona, *see* Siena
Cremona, *see* Alfianello
Cusignano, *see* Borgo San Donino
Cusignano presso Fidenza, *see* Borgo San Donino
Ferrara, *see* Renazzo and Vigarano
Fiume Potenza, *see* Monte Milone
Gabiano, *see* Borgo San Donino
Gerano, *see* Orvinio
Girghenti, *see* Girgenti
Gorizia, *see* Avče
Isonzo, *see* Avče
Isonzo thal, *see* Avče
La Scarpa, *see* Orvinio
La Spezia, *see* Lerici
Laspezia, *see* Lerici
Lucignano d'Asso, *see* Siena
Lusignano d'Asso, *see* Siena
Macerata, *see* Monte Milone
Mailand, *see* Cereseto
Mainardi, *see* Vigarano
Milan, *see* Cereseto
Milano, *see* Cereseto
Modena, *see* Albareto
Morandi, *see* Vigarano
Motta de' Conti, *see* Motta di Conti.
Motta dei Conti, *see* Motta di Conti
Offiglia, *see* Cereseto
Ottiglia, *see* Cereseto
Ottiglio, *see* Cereseto
Parma, *see* Borgo San Donino
Pastrona, *see* Cereseto
Pavia, *see* Valdinizza
Perugia, *see* Assisi
Pezza del Meleto, *see* Orvinio
Piacenza, *see* Borgo San Donino
Piedmont, *see* Alessandria, Cereseto, and Motta di Conti
Piemonte, *see* Alessandria, Cereseto, and Motta di Conti
Pienza, *see* Siena
Pieve, *see* Vigarano
Pieve-di-Cusignano, *see* Borgo San Donino
Pollenza, *see* Monte Milone
Pontevico, *see* Alfianello
Potenza River, *see* Monte Milone
Pozzaglia, *see* Orvinio
Rieti, *see* Orvinio
Roggia Marcova, *see* Motta di Conti
Roletta, *see* Motta di Conti
Roma, *see* Orvinio
San Albano, *see* Valdinizza
San Giovanni d'Asso, *see* Siena
San Giuliano, *see* Alessandria
San Giuliano di Alessandria, *see* Alessandria
San Giuliano Vecchio, *see* Alessandria
Sant' Albano, *see* Valdinizza

Santa Giulietta, *see* Alessandria
Spedalone presso Pienza, *see* Siena
Spezia, *see* Lerici
Spoleto, *see* Collescipoli
Suoma, *see* Siena
Terni, *see* Collescipoli
Thal von San Giuliano Vecchio, *see* Alessandria
Torre, *see* Assisi
Torre Assisi, *see* Assisi
Torre presso Assisi, *see* Assisi
Umbria, *see* Orvinio
Val di Nizza, *see* Valdinizza
Val d'Isonzo, *see* Avče
Val di San Giuliano Vecchio, *see* Alessandria
Valle di San Giuliano Vecchio, *see* Alessandria
Valle Isonzo, *see* Avče
Val Nizza, *see* Valdinizza
Valnizza, *see* Valdinizza
Varano, *see* Borgo San Donino
Varano de' Marchesi, *see* Borgo San Donino
Varzi, *see* Valdinizza
Verolanuovo, *see* Alfianello
Verona, *see* Vago
Vigarano Pieve, *see* Vigarano
Vignabona, *see* Borgo San Donino
Vilabella, *see* Trenzano
Villa di Cella, *see* Borgo San Donino
Villanova, *see* Motta di Conti
Villanova di Casale, *see* Motta di Conti
Villanuova di Casale, *see* Motta di Conti
Villanuovo, *see* Motta di Conti
Villeneuve, *see* Motta di Conti

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