



# Rome in London: The Marbles of the Brompton Oratory

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Located in South Kensington, Brompton Oratory (Brompton Road, SW7 2RP), also The Church of the Immaculate Heart of Mary, is the second largest Roman Catholic Church in London after Westminster Cathedral, and like Westminster Cathedral, the interior is a feast of decorative marbles. Much of this church was built between 1880 and 1884. It was consecrated in the latter year. However the dome was not completed until 1895. The interior decoration, on which this works focuses, was not completed until 1932, under the direction of Italian architect C. T. G. Formilli.

The Congregation of the Oratory of St Philip Neri is a society of priests and lay-brothers who live in a community bonded by charity. Though deeply bonded to the Roman Catholic faith, Oratorians do not take vows and are therefore not part of a religious institute and members are secular clergy. The congregation was founded in Rome by St. Philip Neri (1515–1595) and achieved papal recognition in 1875. Cardinal Newman introduced the Oratory to England in 1847, establishing Oratory houses and churches initially in Birmingham and then in London. The original London premises were located on King William Street, until a temporary church was established here in Kensington.

A full history of the establishment, architecture and construction of the London Oratory is provide in The Survey of London (Sheppard, 1983). A competition, open to both Catholic and non-Catholic architects, for the design of the new church was opened in January 1878 presided over by Alfred Waterhouse. The first prize was awarded to the relatively unknown architect Herbert Gribble. The brief was to construct a church in the classical style, but his was extremely controversial at the time. An argument called 'The Rood Screen Controversy' raged between architects and churchmen of rival Gothic *versus* Classical camps. Catholic convert Pugin led on the Gothic side, with a belief that any other style was pagan. Architectural historian James Fergusson advocated a classical style. However, the final decision was that the church was to be built in the style of the Italian Renaissance.

Thirty architects entered designs for the competition but the design of the Oratory was won by rank outsider Herbert Gribble. Twenty-nine year old Gribble was from Plymouth. He was not a major architect and had mainly worked in the Gothic Revival style. Prior to the Oratory, his only major monumental work was the Armada Monument on Plymouth Hoe and his many critics doubted that he could pull off a building on the scale of the Oratory. However, Gribble had the support of prominent Catholic the Duke of Norfolk of Arundel Castle (Robinson, 1984). Classical churches such as the London Oratory were uncommon in the period and the 'all-over internal polychromy' effect in marble was very much part of this style, evoking churches in Italy and indeed the basilicas and temples of Ancient Rome. Gribble pulled off his commission with élan. The Oratory benefitted from the decline of Baroque taste (in favour of neoclassicism and Gothicism) in Italy during the 19<sup>th</sup> Century and acquired entire altarpieces from continental churches as well as sculpture from Siena Cathedral. The completion of the interior decoration took place after Gribble's untimely death in 1894 under the direction of Italian architect and author of 'The Stones of Italy' (1927), Caesar Titus Giuseppe Formilli.

The building and the decoration of the oratory took place at a time when there was a great resurgence and interest in decorative building materials. Considerable efforts had been made by geologists and explorers to re-discover the quarries worked in Antiquity and reopen them. These endeavours had been successful and a number of quarries in Greece and North Africa had been reopened. Marbles became very popular in interior decoration in both ecclesiastical and civic architecture and even in hotels and, famously Lyons Tea Houses. The main London stone contractors at the time were Farmer & Brindley<sup>1</sup>, J. Whitehead & Sons Ltd

<sup>&</sup>lt;sup>1</sup> William Brindley (1832-1902) had been the discover of a number of the ancient quarries in Greece and Egypt; see <a href="http://www.westminstercathedral.org.uk/tour\_brindley.php">http://www.westminstercathedral.org.uk/tour\_brindley.php</a>

and Fenning & Company. Certainly Farmer and Brindley who were both sculptors as well as marble contractors supplied the statue of Cardinal Newman and the baldachino in St Philip Neri's Chapel. Part of Gribble's specifications for the interior was the use of Devon Marbles from his home county and these were cut and supplied, ready for fitting by J. & E. Goad of Plymouth.

# Main Building Materials and the Exterior of the Oratory

The church is ashlar-built from Portland Stone (rather than clad brick), but the vaults and domes are of concrete. According to Sheppard (1983), the building is roofed with North Wales Duchess Slates. Although out of sight, an inspection of the church roof using Google Earth shows the slates to have a distinctively purplish hue, suggesting an origin from the Carnarvonshire quarries, either from Dinorwic near Llanberis or Penrhyn at Bethesda. Slate was sold in a range of sizes called Princesses, Duchesses, Countesses and Ladies; Duchesses were the second largest size, measuring 24" x 12".

In front of the entrance, the paving is red sandstone (probably Mansfield Red Stone from Nottinghamshire) and Portland Stone. Setts are York Stone from the Pennines and the kerbs and frames are of red, Finnish Balmoral Granite.

To the right of the entrance is a statue of Cardinal Newman. This is in Carrara Campanella marble, set in a niche and base of Portland Stone.

# The Interior

The intention of this guide is to attempt catalogue the stones used in the Brompton Oratory and to identify them to the interested observer. A large number of decorative stones are used in the Oratory and many are used in more than one location. Important stones and their geology and history are described where they are best observed in the chapels or naves. A short guide to the Oratory (including a plan) is available from the shop (Anon., 2012). This provides information on the history, art and architecture of the building and these details are not duplicated here except where relevant to the stones used. For ease of reference, this guide follows the same route as the Oratory's guide, starting at the Baptistry. On entering the church, turn to your right. The baptistry is not open to the public but can be viewed through the gates. The stones are listed for each part of the building and then described in more detail in the 'Index of Stones' at the end of this guide.



# 1. Baptistry

The beautiful font is reputably a half size reproduction of the one in Orvieto Cathedral. It is surmounted by a bronze angel, a copy of Donatello's sculpture in the Church of San Giovanni, Siena.

*Font*: An octagonal Brèche Sanguine basin stands on a pedestal of English Alabaster, carved with acanthus leaves. This sits on another octagonal slab of Brèche Sanguine which in turn rests on a ring of Venetian lions in white Carrara Marble.

*Floor*: Chequerboard pattern of white Carrara Sicilian, red Rosso Antico and red and grey Rouge Royal.

# 2. WW1 Memorial

This memorial commemorates 250 Catholic servicemen who died in the Great War. The Pièta & Scrolls are carved

from white Carrara Statuary marble. The walls of the niche are clad with Rose Numidie and the floor is paved in the classic black and white pairing of Belge Noir and Cararra Sicilian Marble.

# 3. St Patrick's Chapel

*Walls*: Fittingly, splendid slabs of Connemara marble clad the walls of the Chapel, in 'Irish Green' and mottled apple green and white varieties. Below the dado, the stone is wine red Griotte d'Italie, with panels of a red and yellow breccia, perhaps Rose Jaspé du Var, surrounded by Vert Alpi in white Carrara marble moulded frames.

*Steps*: Watson (1916) states that Kilkenny Black was used in the Oratory, and it is likely that the black stone used on the steps of St Patrick's Chapel is of Irish origin.

*Floor*: The paving is laid in the Renaissance style with Languedoc (red), Giallo Sienna (yellow), Pavonazzo (black and white) opus sectile work, in frames of black marble, again possibly Kilkenny Black in a ground of grey Carrara Bardiglio marble.

According to the Oratory guide (Anon., 2012), the altar here was brought from the Naples region of Italy, although it was installed by Gribble, and altered by him.

*Altar*: The front is of white marble with book-matched panels of purple and white Fior de Pesco (Apuane) framed by dark green Verde Alpi serpentinite. The socle is Bleu Turquin. There are also inlays of book-matched travertine. The upper part of altar features Giallo Siena. The white marble is probably Carrara Sicilian. The altar steps have risers of Vert Alpi, with treads of a grey (Carrara) marble, probably Bardiglio.



St Patrick's Chapel; The paving and lower part of the walls.

# 4. Chapel of St Mary Magdalene

This Chapel was designed by Gribble, and therefore Plymouth marbles are a major feature of its design. The mosaic panels are by A. Capello of Chelsea and completed in 1883-4 (Anon., 2012).

*Floor*: The paving is Renaissance style opus sectile with central sunbursts in Giallo Siena and red Languedoc, surrounded by green Vert d'Estours, variegated Pavonazzo and trims of black and white marble, which may be Belge Noir and Carrara Sicilian respectively (see also Bowden, 1897).

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*Altar*: The socle is probably a black and white veined Plymouth marble. The reliquary is framed by Giallo Sienna Breccia with panels of pietra dura work. The pillars are English Alabaster on Plymouth Marble Bases. The altar rails have balusters of Brèche Sanguine with socle and cill of variegated Pavonazzo marble. The altar steps are of Plymouth Marble, dark grey and veined with red and white.

*Walls*: below the dado, the side walls are clad with beautiful panels of Sarrancolin d'Ilhet. They are set with panels which have moulded frames of Belge Noir, a border of a red Griotte (probably Griotte d'Italie) and central panel of breccia. For the skirting, the moulding is possibly Bleu Belge or similar on a socle of Belge Noir.



The paving in the St Mary Magdalen Chapel

# 5. Chapel of Blessed John Henry Newman

At first glance, Cardinal Newman's Chapel appears to be a riot of marble, but with the exception of the altar steps, all is trompe l'oeil. The walls are clad with a red scagliola, a composite of coloured resins and plasters used for centuries to mimic stone. A black and gold marble, portoro, appears to form pilasters, frame the portrait and also forms the cill and socle of the rails, but this is in fact a clever and very well executed paint effect to imitate this stone. The portrait is a copy of John Everett Millais's portrait of the Cardinal which hangs in Arundel Castle. This chapel has been recently installed and was designed by architect Russell Taylor in 2010.

# 6. Lady Altar

The elaborate and beautiful altar piece of the Lady Chapel came from a church due for conversion to a hospital in Brescia, Northern Italy. It came from the Chapel of the Blessed Virgin of the Rosary in the Church of San Domenico, and was purchased in 1881 by the Superior of the Oratory Father Keogh. The Altar, niche, pediment, sculpture and columns came together. The pietra dura work that once formed the revetment to the chapel walls in Brescia went to a mansion near Hyde Park which has subsequently been demolished.

According to an inscription, it is by Florentine architect Francesco Corbarelli and his sons, Domenico and Antonio and constructed in 1693. Corbarelli may have worked in the *Opificio della pietra dure* in Florence. Statues of St Dominic and St Catherine stand in niches, and on the pediment are the figures of the reclining prophets and Faith and Charity. The angels around the central niche and the *putti* on the top are the work of Tommaso Ruez (d. c. 1696). St Pius V and St Rosa of Lima are by Orazio Marinali (1643-1720).

*Altar*: Pietra Dura used a wide variety of carefully selected coloured stones to produce detailed images of plants, fruit, flowers and birds. The centre of the industry was Florence, but skilled workers also worked in Derbyshire and in Torquay during the 19<sup>th</sup> Century. The quality of work was very high for the British craftsmen, indeed, it is difficult even for connoisseurs of these works to firmly identify a source. It is only the presence of local stones (Devon and Derbyshire 'marbles') in British examples which provenances these works as these materials were not exported to Italy. The altar itself here is certainly of Italian origin and contains 'lapis lazuli, rock crystal, agate, mother of pearl, amethyst and red carnelian' (Bowden, 1897, quoting The Tablet, Apr 5<sup>th</sup>, 1884). Also Fior de Pesco (Eretrian) and Brocatello form the scrolling acanthus leaves, yellow elements are Giallo Siena, black and white brecciated marble Petit Antique on the butterflies wings and looping acanthus leaves, White Marble (probably Carrara), Belge Noir and Verde Alpi are also used. The background is grey Carrara Bardiglio.

The altar sits on a base of a red stomatactis marble, probably Belgian Rouge Royale, with steps of a pale pink, nodular limestone Nembro Rosato from Verona.



The Lady Chapel Altar

Statuary: The statues are all carved from Carrara Statuary Marble (Bowden, 1897).

*Floor*: the paving surrounding the altar is Rosso Verona with mosaic panels.

*Altar Rails*: The balusters are Languedoc, with cill and moulding in white Carrara Marble. The socle is similar to Grand Antique – maybe the variety Grand Antique de Biscasillas. Pilasters have tops of Verde Antico, and panels of Spanish Brocatello with pietra dura work. This is typically Victorian in style and therefore probably contemporary with the construction of the oratory. It may be either Florentine or Derbyshire work. Ovals of lapis lazuli are set into these.

# 7. St Wilfrid's Chapel

Another feast of marble awaits the urban geologist in St Wilfrid's Chapel. This chapel was dedicated to William Faber who is buried in front of the altar.

*Walls*: Splendid slabs of Mexican Onyx Marble (Bowden, 1897) cut parallel to laminations (vein cut) line the walls of this chapel. The dado panel is of a dark red stromatactis marble, probably Rouge Royale.

*Square Columns by the altarpiece*: The bases are beautiful examples of dark red Cornish Serpentinite. The upper parts are Plymouth Marble. The capitals are Carrara marble (Bowden, 1897).

The High Altar originally was in the church of St. Remy at Rochefort in Belgium. However it had been moved to the church of St. Servaas at Maastricht in Holland in 1811. It was bought from this church to the Oratory in 1884. The work has been attributed to Étienne Fayn (1712–90) (Sheppard, 1983).

Altar & Baldachino; These elements are in a pink and grey, coral-rich limestone which is Belgian in origin and called Byzantin Beige et Noir.

Apse: The walls are clad with Swiss Cipollino, with panels of onyx, framed by red Languedoc.

# Santa Cecilia Memorial

This is a replica of the statue of Santa Cecilia by Stefano Maderno which sits in front of the sanctuary of Santa Cecilia in Trastavere in Rome (see Lo Bianco, 2006). The version here also lies in a niche surrounded by decorative marbles (below).



Santa Cecilia

*Statue*: The statue of Santa Cecilia, is, like the original in Rome, Carrara Statuary. It is set in a niche of Brèche Sanguine.

*Pediment*: The Chi-Rho is on roundel of Rosso Antico, framed by Giallo Siena, Fior de Pesco (Eretrian) and (presumably salvaged) Africano. Also, Cipollino, lapis lazuli and white Carrara marble are used here with great effect. The sides have panels of a beautifully figured, dark brown onyx marble, which is probably Alabastro a tartaruga, with frames of Verde Alpi and Grand Antique.

*Dais*: This is composed of grey marble with inlay of bookmatched Languedoc, Verde Alpi, Verde Antico (roundel) and a red & white gastropod-rich lumachelle (a marble rich in fossils shells), framed by Giallo Siena. The lumachelle is of unknown origin.



St Wilfrid's Chapel Altarpiece

# William Faber's Tomb

William Faber's (1814-1863) tomb slab is front of the altarpiece. Faber was an alumnus of University College London and became a dedicated follower of Cardinal Newman. However he is most well known as a writer of hymns. The main slab of the tomb memorial is in grey Repen Zola with fragments of shell fossils, with Belgian Black frame & Giallo Siena ribbon.

# 8. The High Altar

Leaving St Wilfird's we now find ourselves in front of the huge apsidal space of the Sanctuary and High Altar. The floor here is wood parquet, with unusual and exotic varieties used; cinnamon, tulip, pear, mahogany, walnut and oak (Anon., 2012).

The walls of the apse are clad with Pavonazzo Marble framing panels of Onyx Marble. The red and yellow Breccia is Brèche de St Maximin and there are also panels of scarlet Languedoc. The skirting is Grand Antique. The narrow columns are of Verde Antico. The altar is Carrara Statuario (Bowden, 1897). The altar rails separate the sanctuary from the nave. The balusters are Carrara Sicilian marble, the cill is Giallo Siena and the steps are Rouge Royale.

#### 9. Altar of Blessed Sebastian Valfré

Sebastian Valfré (1629-1710) was the first Oratorian to be beatified. The candy-twist columns that frame the altar are Belgian Black. The walls are clad with Cipollino and panels of Verde Antico. These are framed

by Pavonazzo. The steps are Pavonazzo and Rouge Royale. The altar itself has Languedoc panels in frames of Giallo Siena (Bowden, 1897).

# 10. Chapel of St Phillip Neri

This Chapel commemorates the founder of the Oratorian congregations St Philip Neri. This altarpiece was designed by Gribble and funded by the Duke of Norfolk.



*Altar*: The socle is of Griotte d'Italie (Oeil de Perdix Marble), with moulding of Giallo Sienna, then white Carrara marble with panels of alabaster. The impressive columns framing the portrait of St Philip Neri are Languedoc. Rosso Levanto is used on the panel behind the altar.

*Quadrant Wings*: From the bottom up, these are comprised of layers of Bleu Belge, Griotte d'Italie, Giallo Verona, Verde Alpi with panels of Rose Jaspe du Var, white Carrara marble, Frosterley Marble, Giallo Verona, Rosso Antico, Carrara marble, Verde Alpi with panels in pale grey limestone bearing the arms of the Duke of Norfolk. The balusters are Pavonazzo (Bowden, 1897). For the altar rails, the socle is Rosso Antico, the balusters are Languedoc and cill of Giallo Siena

# 11. Chapel of the Seven Dolours

This is a funerary Chapel dedicated to the Mother of Sorrows. At the altar, the balusters are Carrara Sicilian Marble, the cill and steps are probably the appropriately sombre Belge Noir.

# 12. St Joseph's Chapel

This chapel's altar has been recently refitted by architect Russell Taylor, also responsible for Cardinal Newman's Chapel. Work took place to install this in 2004-5.

Walls: Swiss Cipollino Marble clads the walls and the door frames are of Brèche Sanguine.

*Altar*: English Alabaster with central panels of Rosso Verona, framed by Connemara Irish Green. The balusters of the altar rails are of English Alabaster set with panels of red Languedoc. The socle is of a

mottled brown limestone, which may be Armagh Marble. The new additions are the columns and entablature surrounding the altar. The columns and wall are scagliola, an imitation marble made with coloured resins. The skirting is Bleu Belge. The entablature is French Richemont Crème Limestone.

## 13. Chapel of the Sacred Heart

This final chapel has an impressively large altarpiece which is a replica of that in the Scuola di San Giovanni in Venice.

*Altar*: Breccia Violetto with roundels & panels of Grand Breche d'Oran, framed by Giallo Siena. The altar rails have Pavonazzo balusters with cill of Verde Antico.

*Altar Piece*: Languedoc fluting on Carrara Sicilian Pilasters, the niches are lined with Campan Vert, with shells and pilasters of Giallo Siena (Bowden, 1897). The altar steps are Campan Vert. The statuary depicting The Sacred Heart with Angels are in Carrara Marble (Anon., 2012).

Floor: The paving is a chequer-board of Languedoc and Pavonazzo.

*Wall*: The walls are clad with a very fine, dark green, banded marble of, unfortunately, unknown origin. Cipollino is also used in the Shrine to St Anthony of Padua, and on the nave size of the chapel.

## 15. The Nave

The Building News of September 1881 commented on the stones used in the Oratory's nave. "Commencing from the floor, the plinth is in Pomfleet black, the capping and base of dado in mottled Mill Quay, and the die in flashed Mill Quay, the base of the pilasters in green, and the shafts in Radford red. The coupled columns of the chapel arches are in variegated Bedford on bases of a warm and delicate shade of lavender. None of the samples can boast of intensity of colour, but the larger portion of the red and also the green possess great beauty." (Anon, 1881). It was in the nave that Gribble used his local marbles to their best effect. Watson (1916) states that 'great quantities' of Radford marble were used in the construction of Brompton Oratory.

*Circular Columns in Chapel Arches*: These columns appear very similar to the fossil-rich Ashburton Marble, with corals and stromatoporoids present. However the description in The Building News describes them as 'variegated Bedford', so it is possible that this is a very similar facies from the Plymstock area. The bases are a pale pink and grey Plymouth Marble, which in some ways resembles the French marble Sarrancolin. However it is very likely that this is one if the pink and grey marbles from Plymouth.

*Rectangular engaged columns*: The description of marbles used in the Building News quoted above fits well with the observation. Pomfleet (or Pomphlet) Black is used on the socles, and then grey, mottled Mill Quay marble, rich in fossil coral fragments. The main sections of the plinths is in heavily veined Mill Quay. This effect of veining was referred to as 'flashing' by stonemasons. A layer of stromatoporoid-rich Ashburton, or a similar Plymouth Marble is also used here. Above this is Kitley Green Marble and we have to rely on the Building News designation of Red Radford Marble for the shafts, though the stone used here strongly resembles Ipplepen Marble quarried near Torquay.

Statues: The statuary in Carrara Marble, is from Siena Cathedral, by Mazzuoli, Late 17<sup>th</sup> Century. Giuseppe Mazzuoli (1644-1725) was born in Volterra but moved to Siena with his father, a mason and his brother also a sculptor, Gianantonia, who taught him his craft. The Twelve Apostles were originally in Siena Cathedral but had been put in storage in Genoa and were bought from there to the Oratory in 1895. Behind the statues are panels of yellow Sienna Marble and these were fitted by Formilli who had apparently initially wanted a bright green marble but was not able to procure one to his liking (Sheppard, 1983).



# **St Peter Statue**

The original version of this statue (left) is in St Peter's Basilica in Rome and is attributed to Arnolfo di Cambio (d. ~1310). The same stones are used here as in the original. The sculpture sits on foundations of Grand Antique, with a moulded plinth of onyx marble, set with panels of Verdi Alpi.

# **Index of Stones**

The origins and geology of the stones used in the interior of the Oratory are briefly described below. For further information on these stones, the interested reader is referred to Price (2007), Dubarry de Lassale (2006), Dodge & Ward-Perkins (1992) and Borghini (2004). These texts also have colour illustrations of these stones. Online resources such as the Oxford University Museum of Natural History's Corsi collection and UCL Earth Sciences Decorative Stone Collection also show good quality images of these stones. A few examples from the latter collection are illustrated below. Each sample is ~ 12 cm across. Renwick (1909) and

Watson (1916) provide accounts of the quarries and descriptions of the stones available in the later 19<sup>th</sup> and early 20<sup>th</sup> Centuries. Rogers (2008) account of the marbles used in London's other great Catholic church, Westminster Cathedral is also a useful resource for studying the stones of the Brompton Oratory. The best available accounts of the Devon marbles are Ussher (2012) and Scrutton (1977).

**Africano** is a very variable, but predominantly red, black and grey brecciated marble which is now known to have been quarried near Teos in SW Turkey. This stone was quarried out in the Roman period and indeed any examples seen in post Roman buildings must have been recycled from Roman ruins. Recently it has been discovered that Africano came from a single block of marble in the Bornova Melange, a geological formation comprising huge blocks of differing materials. The old Roman Quarry is now a lake, Kara Göl.

Armagh Marble is a mottled, brown and white limestone from the Carboniferous of Northern Ireland. Its unusual mottled texture may be a consequence of heating associated with local igneous activity.

Ashburton Marble is a mottled grey, Devonian limestone, streaked with red and white veins. Close inspection shows this stone to be rich in fossil corals, crinoids and stromatoporoids, the latter looking rather like slices through large mushrooms. It is quarried at Linhay, near Ashburton in Devon. Similar varieties exist in the Plymouth area (see Plymouth Marble).

Bardiglio is a grey marble with fine white veining. It is one of the Carrarra Marbles from Tuscany in Italy.

**Belge Noir** was for many years, the standard, jet-black marbles available. They are homogenous, fine grained, free of fossils and take a good polish. The black colour is imparted by finely disseminated carbon throughout the stone which tells geologists that it was formed in a stagnant (anoxic) marine environment. Varieties were quarried in Tournai, Namur and at Golzinnes and they came from strata ranging in age from Devonian to Lower Carboniferous. These stones are very difficult to distinguish (see Mamet, 1964) and they are also difficult to distinguish from other black 'marbles' such as the Irish Blacks and British Ashford Black.

Bedford Marble – see Plymouth Marble.

**Bleu Belge** is a grey-black limestone from Belgium, streaked with white calcite. It is quarried at Bioul, Namur and Fontaine l'Evêque in Hainault, Belgium.

Bleu Turquin is similar to Bardiglio (above) it is a distinctly blue-ish marble from Carrara.

**Breccia Violetta** is quarried in the Serravezza region of Carrara in Tuscany. It is composed of vari-coloured blocks which vary in colour in shades of purple.

**Breche de St Maximin** is a spectacular red and yellow breccia quarried on Mount Aurelien near Porcieux in the Var department of Provence. It was a Jurassic limestone which was broken up and recemented by movement along a major fault during the Eocene period.

**Brèche Sanguine** is, as the name suggests, a dark red-coloured brecciated limestone. It is one of the suite of stones quarried in Algeria and known generically as the *Numidian Marbles*. These were supposedly Roman period quarries (though there is little evidence of their use from this time) which were 'rediscovered' by explorer Emile Delmonte in the latter half of the 19<sup>th</sup> Century. The quarries are located on the Gebel Arousse, to the west of Oran on the northern coast of Algeria. They are Jurassic to Cretaceous-aged limestones, not true marbles, which range in colour from red through pink and yellow. Porter (1907) says that the quarries are located on the summit plateau, on one side the Jaune de Numidie and Rose de Numidie varieties are found. On the other side of the plateau the stones become brecciated and it is from there that Brèche Sanguine is found, along with the more vari-coloured Grand Brèche d'Oran. The quarries were in operation until the 1950s.



Grand Brèche and Rose Numidie

**Brocatello** is a bioclastic sediment, rich in fragments of fossil rudist shells in a mottled yellow and red groundmass. It is an early Cretaceous Limestone, which has been quarried at La Cinta near Tortosa in Catalonia, Spain since the Roman period. This was a particularly popular stone for use in pietra dura work during the 18<sup>th</sup> Century.

**Byzantin Beige et Noir** is a pale pink and brown limestone with abundant grey and black banded veins and corals. It is cross-cut by a stockwork of white calcite veins. These rocks were once reef mounds which are distributed across what is now the Dinant and Philippeville regions of Namur, Belgium.

**Campan Vert** is one of several marbles which range in colour from wine red, through pink, green and multicoloured 'melange' varieties which are worked in the French Pyrenées in the upper Campan valley at Espiadet. They have been quarried since the Roman Period. Geologically they are known as the Griotte Limestones, 'griotte' meaning cherry and referring to the (sometimes cherry red) nodular features observed in the stones. They are Devonian limestones, occasionally containing fossil goniatites, which have subsequently been deformed and weakly metamorphosed during the construction of the Pyrenées.

**Carrara Campanella**, also called Campanile, is a variety of white Carrara Marble that was reputed to ring like a bell when hit with a hammer. It was a hard, dense form of Carrara Sicilian marble and though hard to carve it was durable in outside locations. The Carrara marbles belong to the Hettangian Marble Unit of the Alpi Apuane. They were originally early Jurassic limestones, deformed and metamorphosed during the Alpine Orogeny. They are worked over a large area in the Massa, Carrara and Serravezza region of Tuscany.

**Carrara Sicillian** like Campanella above, is a white marble from the Alpi Apuane in Tuscany, Italy. It is predominantly white, but contains streaky, pale grey veining.

**Carrara Statuary** is the best quality white marble quarried in the Massa and Carrara region of the Alpi Apuane, Tuscany.

**Cipollino**, despite the Italian name meaning 'little onion', is a marble from the Greek island of Evvia (Euboea) and has been quarried since Antiquity. It has spectacular green and white, variably contorted stripes, which do resemble slices through a green onion. The white bands are calcite marble and the green bands are rich in micas and chlorite, the latter imparting the colour. These were once early Jurassic limestones which were strongly deformed in the Cretaceous.



Brocatello and Cipollino

**Connemara Marble** varies from green and white varieties to pure green varieties, the latter marketed as 'Irish Green'. It is worked from several quarries surrounding Clifden, Connemara in County Galway, Ireland. The colour is imparted by green minerals including chlorite, epidote, tremolite, forsterite and diopside. The represent a sequence of once muddy limestones which were metamorphosed around 450 million years ago.

**Cornish Serpentinite** comes in many colours and is a well-known British decorative stone, which can compete with any of the Alpine serpentinites. However exploitation was never realised at an industrial scale, which with hindsight has been a benefit for the scenic area of The Lizard in Cornwall. There is a huge variation in textures and colours possible in Cornish serpentinites. The dark red variety seen here is a red bastite serpentinite; 'bastites' are the bronzy crystals, 3-4 mm diameter which fleck the red matrix. The Lizard serpentinites were once an ancient seafloor, which was emplaced onto the continental mass around 300 million years ago.

**English Alabaster** is quarried in Chellaston in Derbyshire and Fauld in Staffordshire and varies from a rustyorange-colour to white stone streaked with orange veins. It was worked from underground galleries in the Triassic Tutbury Gypsum Beds. This is one of Britain's oldest and most important of decorative stones, quarried since the Middle Ages, it has been used for wide variety of church trappings, including sculpture memorials and tomb effigies both in the UK and in northern Europe.

**Fior de Pesco (Eretrian)** is a streaky, varicoloured, pink, red, purple and white marble breccia from Eretria on Evvia Greece. It has been quarried since the Roman period.

**Fior di Pesco Apuane** is from the Serravezza region of Carrara. It has similar colouration to Eretrian Fior di Pesco above, but its texture is more blotchy and it is much less variegated and streaky in appearance.

**Frosterley Marble** is a black Carboniferous limestone, with large, white solitary coral fossils (*Dibunophyllum bipartitum*) from Weardale in County Durham. It has a long history of use in British ecclesiastical architecture.

**Giallo Siena & Giallo Siena Breccia** are quarried in Montarrenti, near Siena in Tuscany, Italy. They are yellow limestones, coloured by the iron oxide mineral goethite. They are variable brecciated and therefore range from more or less pure yellow varieties to yellow varieties more or less streaked with purple veins.

Grand Antique, Petit Antique & Grand Antique de Biscasillas are all striking black and white marble breccias with jet-black, angular clasts in a white calcite matrix. Grand Antique comes from Aubert in the Midi-Pyrenées, Petit Antique is from Hechettes in the Hautes Pyrenées and Biscasillas (known only from

early 20<sup>th</sup> Century Stone catalogues and a sample in UCL's collection) is also probably from the Hautes Pyrenées. They are Cretaceous tectonic breccias, formed by movement along faults fragmenting black limestone and recementing them with white calcite.



Frosterley Marble and Grand Antique

Grand Breche d'Oran – see Brèche Sanguine, above.

**Griotte d'Italie** is a wine-red, Devonian, nodular limestone quarried the Aude, SW France. They are also known as partridge-eye (oeil de perdix) because of the frequent, white circular features which are the remains of fossil goniatites. A very similar stone, Griotte de Sost is sourced from equivalent strata in the Pyrenées.

Jaune Numidie – see Brèche Sanguine, above.

Irish Green – see Connemara Marble, above.

**Kilkenny Black**, also known as 'Irish Black' is a bituminous, fine grained limestone, largely free of fossils and capable of taking a good polish. It is quarried around the town of Kilkenny in Ireland. Black limestones are problematic as they have no distinguishing features. In the absence of architectural records, this stone is indistinguishable from Belge Noir, and indeed other black limestones from Ireland (Carlow Black, Galway Black) or Derbyshire's Ashford Black.

**Kitley Green Marble** is a beautiful green, banded stone with the odd red streaks. It is a Devonian-age, Devon marble from Yealmpton. One of Gribble's local marbles, William Ussher (1912) wrote '*Near Kitley House, on the east, there is a quarry in dark grey, rather coarsely crystalline limestone with yellowish veins. The limestone is exposed in a small quarry in the Plantation near the high road, at nearly half a mile east of Kitley House, close to its junction with a mass of diabase exhibiting spheroidal structure; it has been altered to a beautiful dark green and purple marble.*'

**Languedoc** is a scarlet red marble, streaked with white from the Gard department of Southern France. Renwick (1909) remarked that this marble is 'rather glaring in tone'.

Lapis Lazuli is used in the oratory for pietra dura and small scale inlay. This is a semi-precious stone, composed of the blue mineral lazurite, white calcite and flecks of metallic, brassy pyrite. This is a rare stone, found only in NW Afghanistan, Chile and Siberia (Baikal). For many years the only known source was Sar-e-Sang mines in Afghanistan, and this is still the main supplier of this rock and is probably the variety used here. It is a rock of complex origins, a 'skarn' which has been metamorphosed by increased heat and simultaneously transformed by fluids.

**Mexican Onyx Marble**. A number of onyx marbles (see below) are quarried in Mexico and were known locally as Tecali. The particular variety used here is from Oaxaca State and was widely used in Mexican Baroque architecture and hence gained a popularity in Spain. In the late 19<sup>th</sup> Century this stone became very popular in the USA but there are several uses of this stone, including the Oratory, here in Britain.

Mill Quay Marble – see Plymouth Marble

**Nembro Rosato** is one a of a series of Jurassic nodular limestones outcropping on the Trento Platform above Verona in the Veneto of Italy. This variety is a pale rose-pink colour.

**Onyx Marble** is a generic name for travertines (see below) with well developed, variegated banding. They are predominantly derived from Mexico, Italy or Turkey. The variety Alabastro a tartaruga is from Montaione in Tuscany. These stones appear very similar and are difficult to provenance in the absence of architectural records. Note that 'onyx' can also refer to siliceous rocks.

Pavonazzo is a variety of Carrara marble which is white with district and abundant dark purple veins.



Mexican Onyx and Pavonazzo

Petit Antique – see Grand Antique, above.

**Plymouth Marble**. A wide variety of marbles are quarried from the Devonian Plymouth Limestone Formation of the Tamar Group. The Devonian period was named after Devon, but these limestone sequences are atypical of most Devonian strata in the British Isles. They were formed in shallow tropical seas, rich in coral and stromatoporoid reefs. These limestones were later weakly altered by local volcanic activity and then subjected to deformation via thrust-faulting and folding (Leveridge et al., 2002).



Plymouth Marbles in the plinths of the nave columns. The main section is Mill Quay Marble. The pattern of veining is very typical of that associated with the deformation of the Plymouth Marbles. Kitley Green Marble forms the uppermost layer visible here.

The decorative stones quarried range from black through grey to shades of pink and red. Some contain fossil corals and stromatoporoids and all are variably cross cut by veins 'flashing' to some degree. Veining varies from white calcite to bright red, iron oxide-rich veins. Several quarries existed in the Plymstock area including Mill Quay, Pomphlet (Pomfleet), Radford, Lummaton *etc.*, and each quarry furnished several stone varieties. A definitive reference guide to these stones is unfortunately lacking. Some reference samples, though often not well provenanced, are available through the British Geological Survey's building stone collection and are useful for comparison with stones encountered at the Oratory. Varieties recorded here are Bedford Marble, Mill Quay Marble, Radford Marble and Pomphlett Marble (Anon, 1881; Ussher, 1912; Watson, 1916).

Pomfleet Black Marble – see Plymouth Marble.

Radford Marble – see Plymouth Marble.

**Repen Zola** is a dove-grey limestone with dark grey fossil fragments. It is one of the many decorative stones quarried from the Cretaceous Aurisina Limestones of Istria, the area around Trieste in Italy.

Richemont Crème is a Cretaceous, cream-coloured limestone from near Pons in Poitou-Charentes, France.

Rose Jaspé du Var is a pale yellow limestone, heavily veined with a network of fine, red veins. It is quarried in the Var department in Provence, France.



Repen Zola and Rose Jaspé du Var

#### Rose Numidie – see Brèche Sanguine, above

**Rosso Antico** is a wine-red marble from Greece, quarried from the Southern tip of the Mani Peninsula in the Peloponnese. It is derived from Upper Cretaceous-Eocene limestones, rich in hematite. The ancient quarries at Profitas Ilias were re-discovered by German geologist Christian Siegel in 1850, but were then contracted by Farmer & Brindley in the 1880s.

**Rosso Levanto** is a red serpentinite from Bonassola, near Levanto in Liguria, Italy. The red colouration is imparted by the iron oxide mineral hematite and is evidence that once this rock unit formed the Jurassic seafloor. These serpentinites were emplaced on the European continental crust during the Cretaceous.

**Rosso Verona** is one a of a series of Jurassic, nodular limestones outcropping on the Trento Platform above Verona in the Veneto of Italy. This variety is red in colour and often rich in ammonite fossils. Geologically it is known as the rosso ammonitico.

**Rouge Royale** is a red limestone which is streaked and blotched with grey and white calcite and also crosscut by white calcite veins. The grey and white blotches are a characteristic feature of this stone known as stromatactis and they represent cavities in what was once a coral reef which have now been infilled with calcite. Fossil corals are also present in this rock, but usually these are only visible at close hand. This is a classic decorative stone derived from Upper Devonian-age reef mounds developed in southern Belgium. It was particularly popular stone in the 17<sup>th</sup> and 18<sup>th</sup> Centuries.

**Sarrancolin d'Ilhet** is a pale-grey Cretaceous limestone which has been fractured, and then the fractures infilled with red and pink sediments. The rock has also been subsequently cross-cut with white calcite veins.

As the name suggests, it is quarried at Ilhet Quarry, near the village of Sarrancolin in the French Pyrenées. The stones have been quarried since the 17<sup>th</sup> Century.

**Swiss Cipollino** is similar to Cipollino proper, from Evvia, described above. It is a green and white banded marble, but the banding is more streaky and diffuse than in Cipollino. It was quarried at Saillon in the Valais of Switzerland.



Rouge Royale and Swiss Cipollino

**Travertine** is a generic name for a specific variety of limestones which have crystallised in a geothermal, freshwater environment. These stones are found and quarried in many locations in Europe and further abroad, but by far and away the main source of travertines is at Tivoli near Rome in Italy. They are very young rocks, many are less than 100 thousand years old.

**Verde Antico** is a breccia of predominantly dark green serpentinite, with the occasional lump of white marble in a pale green matrix. It has been quarried since antiquity at Chasanbali in Thessaly, Greece.

Verdi Alpi is a generic name for a large number and variety of serpentinites quarried in the French and Italian Alps in the Val D'Aosta region and adjacent French border regions. These include stones marketed under the names of Verte Maurin, Verde Mogiove, Verde Gressoney and many others. The term has been extended to include indistinguishable stones from the Genoa region too. These rocks represent slivers of Alpine sea-floor, emplaced on the European continent during the Alpine mountain building event. All serpentinites are soft stones, capable of taking a good polish. They are generally shades of green, however red varieties are also known and described separately (see Rosso Levanto). They are composed of the serpentine group of clay minerals, named lizardite, antigorite and chrysotile.

**Vert d'Estours** is very similar in appearance and origin to Campan Vert (described above), in being a white and green nodular limestone quarried in the French Pyrenées. The quarry at Estours in the Ariege works stone which shows two sets of planar features, bedding planes and an axial planar cleavage which is orthogonal to the bedding. The nodules in the limestone are elongated parallel to this cleavage rather than to the bedding planes as in Campan Vert.

# Acknowledgements

I am very grateful to Paul Clark, Head Sacristan and Father Rupert McHardy for allowing me to examine the marbles and other decorative stones used in the Brompton Oratory, and importantly for allowing me to take photographs. I would also like to thank Father Charles Dilke for his fascinating tour of the building which gave an insight into the faith of the Oratorians as well as the history, architecture and evolution of this church.

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#### Links to online Stone collections

British Geological Survey|Geoscenic: http://geoscenic.bgs.ac.uk

Corsi Collection online, OUMNH; http://www.oum.ox.ac.uk/corsi/about/oxford

UCL Building & Decorative Stone Collection: http://www.ucl.ac.uk/~ucfbrxs/Homepage/StoneH ome.htm

More photos at on.fb.me/1GOxfu8

# How to cite this article:

Siddall, R, 2015, Rome in London: The Marbles of the Brompton Oratory, Urban Geology in London No. 25, 18 pp., <u>http://ruthsiddall.co.uk/Walks/Brompton.pdf</u>